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CONTENTS AND SUBJECT INDEX

War and the Migration of Tropical Diseases. Lieut. Col. Thomas T. Mackie, M. C., A. U. S. 1
Discussed by Dr. Meleny.

Epidemiology of Influenza. Thomas Francis Jr., M.D., Ann Arbor 4
Discussed by Dr. Smillie.

Malaria as a World Menace. L. T. Coggeshall, M.D., Ann Arbor 8

Nutritional Diseases as a Postwar Problem. John B. Youmans, M.D., Nashville, Tenn. 11
Discussed by Dr. King.

The Supply of Drugs and Medical Materials in the Postwar Period. Col. Charles F. Shook, M. C., U. S. Army 15
Discussed by Lieutenant Colonel Currie, Major Baer and Colonel Shook.

Postwar Needs for Medical and Other Trained Personnel. Edward C. Elliott, LL.D., Washington ... 18

Trends in Scientific Research. A. R. Dochez, M.D., New York 20
Discussed by Drs. Blake, Weed and Richards.

Health — A World Problem. F. P. Keppel, LL.D., New York 25

Work of the Red Cross in Postwar Medical Rehabilitation. Richard F. Allen, Washington 26

Inter-American Cooperation. Nelson A. Rockefeller, Washington 28

American Medicine's Contribution to Postwar Medical Service. Morris Fishbein, M.D., Chicago 30

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

Contact Dermatitis from Olive Oil. Richard L. Sutton Jr., M.D., Kansas City, Mo. 34

A Method of Restoring Nerves Requiring Resection. Walter E. Dandy, M.D., Baltimore 35

COUNCIL ON PHYSICAL THERAPY 37

EDITORIALS

Postwar Medical Service 38

Source of Poliomyelitis 40

The Principles of Refrigeration (Crymo-) Anesthesia 40

CURRENT COMMENT

What Public Knows About Health. 41

Pharmacopeia Adds Multiple Vitamin Compounds 42

Muddy Thinking in the Times About Commissions for Women Physicians 42

Cobra Venom for Pain of Arthritis. 42

"B_1 Vitamin Hypoimmunity" 42

BUREAU OF LEGAL MEDICINE AND LEGISLATION 57

(Subject Index on next page)

MEDICINE AND THE WAR

The Army 43

Civilian Defense: Civilian Physicians in OCD and U. S. P. H. S. Affiliated Units to Give Army Temporary Local Assistance in Military Emergencies 44

Wartime Graduate Medical Meetings 45

ORGANIZATION SECTION

Official Notes 47

Medical Legislation 47

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SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article: "ab," abstract; "E," Editorial; "C," Correspondence; "MI," Medicolegal; "ME," Medic. Economics; "OS," Organization Section.

A. M. A., wartime graduate meetings....45
Abel, J. J., tribute to....*25
Acid, ascorbic, for essential hypertension..ab-59
Allen, F. W., refrigeration anesthesia....E-40
Allergy: gasoline dermatitis....MI-57
American Association of University Women, award....51
College of Physicians, wartime graduate meetings....46
College of Surgeons, wartime graduate meetings....46
Drug Manufacturers Association....52
Neurological Association....51
Psychiatric Association....51
Psychoanalytic Association....51
Anesthesia, refrigeration....E-40
Arthritis, pain, cobra venom for....E-42
Atabrine to control malaria....*9
Auto driving and sulfonamides....70
Aviation, physiologic problems....*22
piloting and sulfonamides....70

Bacteriology nomenclature, commission....51
Beveridge Plan....*33; E-38
Birth certificate omits parents' names, Ga....49
Bladder incrustations, treatment....70
Blood bicarbonate (plasma), formula for....70
donor service of Red Cross expands, Ga....49
hypoprothrombinemia after hepatic damage.70
pressure, high essential, ascorbic acid for.ab-59
pressure, high, vertigo in....69
pressure, high, vitamin A for....ab-60
substitutes in resuscitation....ab-64
sugar, effect on electroencephalogram....ab-62
transfusion in the desert....53
Board Examinations....57
Body and Mind Foundation....50
Book Notices....67
Books Received....Adv. Page 34
Brain, electroencephalogram and glycemia..ab-62
Bureau of Legal Medicine and Legislation...57

Candy and tooth decay....ab-59
Carbohydrate, B1 vitamin hypoimmunity....E-42
Carnegie Corporation grants....*25
Central Society for Clinical Research....58
Children, Buffalo Child Care Association, Inc.50
Chlorinated naphthalene, poisoning....ab-65
Choriomeningitis, lymphocytic, Palestine....54
Cobra venom for arthritic pain....E-42
Colitis, ulcerative chronic, ileostomy for...ab-61
Colon cancer, surgical treatment....ab-64
Committee on Medical Research....*21
Condoms, cause prostatitis?....70
Council on Physical Therapy....37
Cowles, Edward S., license suspended....50

Davis, Paul W., reported missing....44
Deaths....55
Dementia Precox, insulin and epinephrine tests in....ab-62
Dermatitis from olive oil....*34
from chlorinated naphthalene....ab-65
Desert, transfusion in....53
Diarrhea, infantile, epidemic, N. Y....50
Diet, maternal, and breast feeding....ab-65
special, and rationing....51
teeth decay and....ab-58
Diethylstilbestrol for prostate cancers....ab-63
Drugs, postwar supply....*15
Dysentery, bacillary, sulfaguanidine for...ab-65

Eclampsia and cerebral dysrhythmia....ab-62
Endometrium extracts and ovarian function.ab-66
Engineering, postwar needs....*18
Epinephrine test in schizophrenia....ab-62
Eyes, motility, course in....49

Foam glass, industrial hazards....69
Food, postwar relief....*11; 53
rationing, guide for special diets in....51
Foot, Madura, first case in Palestine....54
Foreign Letters....53
Frit, industrial hazards....69

Glass wool or frit, industrial hazard....69
Gout, diet and cinchophen for....ab-61
Government Services....52

Hanger's reaction in jaundice....ab-66
Health, a world problem....*25
National Resources Planning Board.*33; E-38
Health—*continued*
of Netherlands under Hitler....46
public, under Hitler's rule....46
U. S. P. H. S., annual report discontinued.52
U. S. P. H. S. in "This is America"....46
what the public knows about....E-41
Hemorrhage, resuscitation after....ab-64
Hexavitamin, U. S. P. XII adds....E-42
Histamine headache: duodenal ulcer....ab-59
Hoffman, William A., death....52
Hospital affiliated units....44
Deshon General....43
Norwegian, conditions in....46
state, expands service to patients....49
Veteran, annual report....52
Humerus, shorten to restore nerves....*35
Hypoimmunity, B1 vitamin....E-42

Immigration visas....*25
Industrial chlorinated naphthalene poisoning ab-65
hazards of glass wool, frit or foam glass...69
manganese poisoning....ab-66
protection of welders....51
Infants, breast feeding and maternal diet..ab-65
mortality of breast and artificially fed...ab-65
Infectious Diseases, in Germany....46
Inflammation, x-rays and radium for....ab-65
Influenza, epidemiology....*4
Insulin test in schizophrenia....ab-62
Inter-American cooperation....*28
Jaundice, Hanger's reaction....ab-66
pneumonia and, in Negro....ab-58
Kenner, A. W., citation with award....43
Kidneys, hypertension, vitamin A for....ab-60
infection (bilateral) with urea splitting organisms....70
lateral pyelography in surgical disorders.ab-66
Lactation and maternal diet....ab-65
reflex governing....ab-65
Legislation, Medical....47
Librarianship, medical, training in....49
Lilly's Theobald Smith Award....51
Liver atrophy (acute yellow) from chlorinated naphthalene....ab-65
damage, hypoprothrombinemia after....70
Madden, S. C., Theobald Smith Award to....51
Madura foot, first case in Palestine....54
Malaria as a world menace....*8
Manganese poisoning in miners....ab-66
Manpower increase, forum on, Buffalo....50
Marriages....54
Massachusetts Vision Test....37
Medical Education, graduate program, Mich..49
graduate, wartime meetings....46
Medical Examinations and Licensure....57
Medical Journal Club formed, S. C....51
Medical Service, National Conference on Planning....*1—*34; E-38
Medical Supplies, postwar relief...*15; *31; 53
Medicine, American: postwar service....*30
Lord Nuffield gift to....53
New York Academy Committee Studies....50
Medicine and the War....43
blood donor service expands, Ga....49
children, wartime care, Buffalo....50
graduate medical meetings....46
hospitals, Deshon General....43
OCD-USPHS affiliated units....44
officer candidate class graduates....43
soldiers to have free legal aid....43
special diets in food rationing....51
"This is America" film....46
women physicians, commissions for....E-42
Medicolegal Abstracts....57
Meetings, Coming Meetings....58
Mice, role in poliomyelitis....E-40
Miller Lecture by Dr. Smith-Petersen....51
Mosquitoes, malaria, a world menace....*8
Motor coordination and sulfonamides....70
Moving Pictures: "This is America"....46
Naphthalene, chlorinated, poisoning....ab-65
National Academy of Sciences....*20
Conference on Planning for War and Postwar Medical Services...*1—*34; E-38
Defense Research Committee....*21
Research Council....*21
Resources Planning Board....*33; E-38
Negro, icterus with pneumonia....ab-58
Nephritis and ureteral stricture....ab-63
Nerves, restoring, shorten the humerus and wire ends....*35
Netherlands, health in....46
Neurosis, % in population....70
New York Academy committee to study medicine and the changing order....50
Fair health quiz corner....E-41
Times on commissions for women physicians....E-42
News....49
Nomenclature, bacteriologic, commission on..51
Nuffield, Lord, gift to medicine....53
Nutrition diseases: a postwar problem....*11

O'Connor, Basil, postwar health planning..E-39
Office of Scientific Research and Development....*21
Olive Oil, contact dermatitis....*34
Organization Section....47
Ovary function: endometrial extracts....ab-66

Paralysis, restore nerves....*35
Paullin, James E., statement by....E-39
Penicillin, anti-infective....*23
Peptic Ulcer, acute duodenal, histaminic cephalgia precedes....ab-59
Pharmacopeia, U. S., XII, vitamin mixtures....E-42
Physicians, postwar needs for....*18
status in the Netherlands....46
supply....*31
"teams" of, for camp hospitals....46
women, army commissions for, New York *Times* on....E-42
Pneumonia with icterus in Negro....ab-58
Poliomyelitis, B1 vitamin hypoimmunity...E-42
gray house mice source of....E-40
Prizes, American Association of University Women, to Dr. Seibert....51
Rochester Civic Medal to Dr. Whipple...50
Smith (Theobald) Award to Dr. Madden..51
Professions, postwar needs....*18
Prostate cancer, diethylstilbestrol for....ab-63
Prostatitis from condoms?....70
Public, what it knows about health....E-41
Pyelography, lateral, in surgical kidney..ab-66

Queries and Minor Notes....69
Quinine to control malaria....*9

Radio Broadcasts....47
Rectum cancer, surgery for....ab-64
Red Cross, blood donor service expands....49
postwar medical rehabilitation....*26
Reflex governing flow of milk....ab-65
Refrigeration anesthesia....E-40
Rehabilitation, postwar....ab-17; *26; *32
Research, scientific, trends in....*20

Salivary glands, mixed tumors....ab-64
San Francisco Fair health quiz....E-41
Scabies, dissemination of....53
Scarlet Fever, outbreak, Neb....50
School, Medical, affiliated units....44
Seibert, Florence, achievement award to....51
Smith-Petersen, M. N., Miller Lecture by...51
Society Proceedings....58
State Board Examinations....57
Stomach secretion and hyperemia....ab-61
Sulfaguanidine in bacillary dysentery....ab-65
Sulfonamides and motor coordination....70
Syphilis treatment, uncooperative patients..69

Teeth decay and diet....ab-58
Thiamine, hypoimmunity....E-42
Tonics and Sedatives....Adv. Page 26
Triasyn B, U. S. P. XII adds....E-42
Tropical Diseases, migration of, and war....*1

Ureters, stricture and Bright's disease...ab-63

Vertigo in hypertension....69
Veterans Administration, report....52
Vision, Massachusetts Test....37
Vitamin A for renal hypertension....ab-60
B1 hypoimmunity....E-42
K, hypoprothrombinemia after liver damage..70
mixture in U. S. P. XII....E-42

War and tropical diseases....*1
Relief Control Board....*25
Welders, standards for protection....51
Wheeler, R. E., appointment at Tufts....49
Whipple, George H., Civic Medal to....50
Whooping Cough, campaign, Ga....49
Wool, glass, industrial hazard....69
World War I, medical supplies after...*15; *31
work of Red Cross in....*26
World War II and American Medicine....*30
blood transfusion in desert....53
health of Netherlands....46
heroes: Davis (P. W.)....44
heroes: Kenner (A. W.)....43
National Conference on Planning for Postwar Medical Services...*1—*34; E-38
Nutritional diseases after....*11
postwar preparations....53
prisoners of war, transporting....46
public health under Hitler's rule....46
rehabilitation after, work of Red Cross..*26
tropical disease and....*1
Wounds, physiologic problems....*22
x-rays and radium for....ab-65

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WAR AND THE MIGRATION OF TROPICAL DISEASES

LIEUTENANT COLONEL THOMAS T. MACKIE
MEDICAL CORPS, ARMY OF THE UNITED STATES

The second world war differs in one fundamental respect from any previous conflict recorded in history—the enormous potential hazard of disease to which populations may and probably will be exposed. This will probably not reach its peak during the period of actual warfare, rather in the period of population readjustments following the cessation of hostilities. War and pestilence are no new partners. On many occasions disease, far more than the operations of armies, has determined the outcome of campaigns and the course of political history. Armies on many occasions in the past have, in fact, functioned as traveling reservoirs of infection from which endemic and epidemic diseases have been widely spread through the civilian populations with which they have come in contact. The resulting outbreaks, however, have been more or less restricted to the zone of military operations. As the science of epidemiology has developed, the application of control methods has progressively limited dissemination. The distribution of typhus fever in the first world war is a striking illustration. Widespread in highly epidemic form in the Balkans, western Russia and Poland, it did not reach the armies of western Europe despite the fact that they too were heavily louse infested.

The problems presented by the second world war are far more complex. The theaters of operations comprise the greater part of the world's surface excepting the continents of North America, South America and Australia. The war to a great extent must be fought in the tropics and the subtropics. Immense numbers of nonimmunes are being mobilized in hyperendemic areas and subjected to the added risk of the limitation of effective control measures, unavoidable in the face of combat conditions. To the classic military diseases of the past, the dysenteries, the enteric fevers and typhus, must be added many of the diseases contained within the category of tropical medicine. The magnitude and ultimate significance of the problem presented by latent infection and the carrier state among military and naval personnel cannot be evaluated. The similar problem presented by refugee peoples in mass emigrations from war devastated areas cannot even be estimated.

Read before the National Conference on Planning for War and Postwar Medical Services, New York, March 15, 1943.

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SCOPE OF TROPICAL MEDICINE

Two questions immediately arise: What is tropical medicine and to what extent does it differ from medicine in the temperate zone? Secondly, and much more pertinent, are not tropical diseases by definition restricted to the tropics and therefore at most of only limited significance outside the hot and humid zones?

Although no completely satisfactory definition has been reached, tropical medicine may be said to comprise a special group of diseases more prevalent in, or restricted to, the warmer regions, many of which are caused by protozoan or metazoan parasites, many of which require particular intermediate hosts or special insect vectors, and some of which at least are limited by special factors of climate.

The limitations imposed by such special factors as intermediate hosts, insect vectors and climate, however, are of less importance in a consideration of the possible spread of tropical diseases than are the local levels of sanitation and personal hygiene. Many so-called tropical diseases have, in point of fact, worldwide distribution. Malaria in endemic and even epidemic form occurs wherever suitable anopheline mosquitoes have access on the one hand to human sources of infection and on the other to nonimmunes. Such anophelines are indigenous deep into the temperate zones, and clinical malaria exists in northern Europe, the British Isles, the northern United States and Canada. For the most part it is a relatively benign disease in these regions, especially since the serious tropical type caused by Plasmodium falciparum has not been imported in sufficient concentration. Plague both bubonic and pneumonic has occurred throughout the world and in epidemic form both in the tropics and in Manchuria in the midst of winter. Outbreaks have occurred in the past in various of our coastal cities. In its sylvatic form it is endemic among wild rodents on the West Coast and the Mountain states and has extended east across the continental divide. Leprosy, widespread in the tropics, in the past was distributed widely over northern Europe and Scandinavia. Between the years 1826 and 1873 four pandemics of cholera spread this disease from Asia to Europe and North America, producing epidemic outbreaks which involved most of the United States. During the first world war the disease occurred in Russia, Austria, Hungary, Germany and Italy. The freedom from yellow fever which we have enjoyed since the last outbreak in New Orleans in 1905 has caused many to lose sight of the fact that highly fatal epidemics have occurred in the past as far north as Philadelphia, New York and Boston. And the most important vector mosquito, Aedes aegypti, is widespread throughout the tropical and temperate zones. The rickettsial diseases are likewise no respect-

ers of geographic or climatic limitations. The Rocky Mountain spotted fever group, including São Paulo fever and fièvre boutonneuse, are widespread in both the tropics and the temperate zone. Typhus fever is ubiquitous in its occurrence wherever conditions favor louse infestation and in certain areas is transmitted by the rat flea and certain ticks as well. Because they have long been recognized to be prevalent in the tropics, amebic and bacillary dysentery have been classified as tropical diseases. Recent experience has shown that climate is not a limiting factor and that these conditions become endemic and even epidemic when sanitary installations and exposure permit contamination of food and water and transmission from infected to uninfected individuals. Even such a strictly tropical disease as filariasis, produced by the Wucheria bancrofti, has existed in an area in the vicinity of Charleston, S. C. It is abundantly evident, therefore, that the implied limitations of climate on the distribution of tropical diseases are not valid and that many serious conditions may be translated from the warm climates where they are normally endemic to other areas where they have been nonexistent, or at most, uncommon.

POSSIBLE EFFECTS OF THE WAR

The worldwide spread of this war and its vast repercussions on certain population groups seem to be creating an artificial and wholly new situation peculiarly favorable for a mass migration of tropical disease and the establishment of new and important areas of endemicity. Several important factors contribute to this possibility.

Many millions of combatants will inevitably be massed throughout the tropical and subtropical regions of Africa, the Near East, Burma, Malaya, China and the islands of the Southwest Pacific. Under peacetime conditions their protection against infection would constitute an enormous problem in the fields of public health administration and sanitary engineering. In time of war, for many, it becomes impossible of accomplishment. The combination of combat conditions with the modern technic of mobile mechanized warfare inevitably reduces the measures of protection against disease to those which are applicable to the individual. This in turn necessarily entails increased exposure to infection. Preventive medicine has made great strides in the field of immunization, and these advances are being applied as rapidly as the development of knowledge makes them available. We have, for example, "vaccines" against typhoid, paratyphoid, tetanus and yellow fever the protective values of which are well established. We have vaccines for plague, cholera and typhus the efficacy of which remains to be evaluated. We have no method of immunizing against the dysenteries, malaria, leishmaniasis, trypanosomiasis and a host of other conditions to which these men inevitably will be exposed during the course of their military duties. Since we cannot prevent exposure, since scientific knowledge does not afford the means for immunization and since therapeutic measures for diseases such as malaria, typhus, the dysenteries, leishmaniasis and trypanosomiasis, among others, do not invariably, and in some instances even usually, eradicate the infecting organism, latent infection and the carrier state must be anticipated among many exposed individuals. Again armies will become mobile reservoirs of infection.

Such a "seasoned" army, in the logic of war, must carry the fighting to the enemy. It must invade occupied countries and establish itself among indigenous populations greatly weakened by malnutrition and semistarvation. Observations of the civilian population of Madrid during the Spanish Civil War permit one to draw what is probably a reasonably accurate picture of the plight of the Axis dominated peoples in many areas. By the end of 1937 the Madrid diet consisted mainly of bread, rice, small amounts of dried pulses such as peas, beans and lentils, and a little animal protein. In 1938 the animal protein was much further reduced. The greatest incidence of deficiency diseases occurred at the end of 1937 and in early 1938. As would be anticipated from the diet limitations, neurologic disturbances appeared first and persisted from October 1937 throughout the period of siege. Pellagra presented two incidence peaks, in the spring of 1938 and again in the spring of 1939. Famine edema became a serious problem after November of 1938. The limited reports available from Axis dominated regions indicate an enormous incidence of serious malnutrition among the civilian populations. Such populations provide peculiarly fertile soil for the implantation of diseases previously not endemic among them.

The tremendous developments in aviation and the constant air transport between widely separated theaters of war provide an obvious means for the translation of disease to new areas. The speed of such travel permits the transportation of infected individuals within the incubation period of many infectious diseases and, lacking effective safeguards and constant vigilance, may well give rise to situations of immense gravity. It would be difficult to visualize a greater calamity than the importation of yellow fever to India.

These extended lines of communication and the varied means of transport create another epidemiologic possibility, illustrations of which are not lacking in the past. The importation of a necessary animal reservoir is an old story in the spread of plague about the world. The conditions in occupied areas, especially those in which extensive bombing and ground combat have occurred, are such as to favor great increase in the rodent population and to set the stage for such diseases as plague, murine typhus, tularemia and leptospirosis.

In similar fashion, importation of a necessary vector previously absent, or an unusually efficient vector, can completely alter the ecology of a disease in a particular region. The accidental importation of Anopheles gambiae from West Africa to the east coast of Brazil is a striking illustration. Malaria previously endemic and with low mortality rapidly became epidemic, accompanied by high mortality. Furthermore, the translation of a potential vector from one endemic area to another may be accompanied by alterations of its biologic activity or habits of such a nature as greatly to enhance its importance as a disseminating agent for disease. Such variations have been shown to exist for anopheline mosquitoes in different areas. In some regions Anopheles albitarsis bites man and is a carrier of malaria; in others it ignores man and is harmless. Moreover, such definite and important differences in the feeding habits of an anopheline have been observed in relatively closely adjacent areas. Anopheles aquasalis (tarsimaculatus) is a man biter and a vector of malaria in Trinidad. It is said to ignore man and to be harmless

in Panama. The reasons for such variations are not understood, yet the problems which they present in connection with mass importation of malaria into an area in which it has not previously been a major problem, and consequently thoroughly studied, are great. Control of mosquito breeding constitutes an essential part of a malaria control program. In areas where the conditions are such that ample breeding places exist, it is frequently impossible to undertake the control even of all the anopheline species. Efforts must be concentrated on the one or two important vectors. It is obvious how complicated the problem might become following the importation of an anopheline, unimportant in its area of origin, which in the course of adaptation to the new environment acquired the characteristics of a competent and efficient vector of malaria.

A further possibility, not as remote as it might seem on casual inspection, lies in the potential adaptation of a strange genus in a nonendemic area to an imported disease producing agent transmitted in another region by a different species within the genus, by a different genus within the family, or even an insect belonging to an altogether different family. Such a possibility is augmented by the widespread geographic distribution of certain important insect families particular members of which are known to transmit certain tropical diseases. Among them are the Argasidae, the soft bodied ticks; the Psychodidae, the phlebotomus or sand flies; the Simuliidae, the black flies, black gnats, buffalo gnats or coffee flies; the Chironomidae, gnats, punkies, no-see-ums; the Triatomidae, the cone nosed bugs; the Trombidiidae, the mites and chiggers; and the Culicidae. Members of these families in various parts of the world are responsible for the transmission of a variety of diseases, important among which are such conditions as Rocky Mountain spotted fever, fièvre boutonneuse, relapsing fever, cutaneous and visceral leishmaniasis, Carrion's disease, American trypanosomiasis, tsutsugamushi disease or Japanese river fever, filariasis, onchocerciasis, the blinding filarial disease, malaria and dengue fever, and certain of the virus diseases.

The transmission of yellow fever in different endemic areas provides a classic illustration of the successful adaptation of different insects to a single disease producing agent. In addition to the familiar Aedes aegypti, jungle yellow fever in South America is transmitted by Haemogogus. In West Africa nine species of Aedes and certain members of the genera Eretmopodites, Culex, Mansonia and Anopheles have been shown to transmit the virus by bite. The spirochete of relapsing fever in Africa is transmitted by the tick Ornithodorus moubata and in the United States by Ornithodorus hermsi and Ornithodorus turicata. In these ticks the infection is transmitted congenitally to successive generations. Relapsing fever is also transmitted by the human body louse Pediculus humanus. The Mediterranean form of the disease due to Spirochaeta hispanicum is transmitted not only by an ornithodorus tick, but by an ixodid or hard shelled tick, and the body louse as well. One of the rickettsial diseases, Q fever, in Australia is spread by the hard tick Ixodes humerosa and in the United States by the soft tick Dermacentor andersoni. Mites which are widely distributed over the world transmit endemic typhus in Manchuria, and the tropical rat mite in this country has been shown to be a successful experimental vector. Filariasis due to Wucheria bancrofti, the common cause of elephantiasis, has a worldwide distribution in the tropics. The larval worms have been shown to undergo complete development in a large number of mosquitoes which are indigenous to many areas outside the tropics. Common and efficient known vectors include Culex fatigans, Culex pipiens, Anopheles variegatus, Anopheles rossi and Anopheles costalis. A related infection, onchocerciasis, is spread by at least five species of the genus Simulium. Recent studies of the encephalitides have demonstrated almost unlimited potentialities for wide dissemination, especially in view of the variety of vectors these viruses accept as transmitting agents. Hammon and his associates have shown that the St. Louis and western equine encephalomyelitis viruses are naturally transmitted by Culex tarsalis, Culex pipiens and Aedes lateralis. A reduvid bug, Triiatoma sanguisuga, has been found naturally infected with the western equine virus in Kansas. Even more significant, perhaps, is the experimental demonstration that two species of Dermacentor ticks can be infected and that in these species transovarian transmission occurs to succeeding generations. The immunologic relationships between the St. Louis virus and the West Nile and Japanese B viruses and between Japanese B virus and the virus of Russian spring and summer encephalitis suggest easy, rapid and wide spread of these diseases.

In certain instances it is probable that importation of a disease agent might rapidly lead to establishment in a new reservoir host and permanent and widespread endemicity. Such host adaptation is as much a reality as is vector adaptation. Several tropical infections adopt a variety of animal hosts. Among these are included plague, which notoriously becomes endemic in a number of rodents, tularemia and brucellosis. Q fever and "nine mile fever," if not due to identical agents, are closely related. The natural reservoir of Q fever in Australia is believed to be the bandicoot. The recovery of the organism in Dermacentor andersoni ticks indicates the presence of an animal reservoir in Montana. Reference has already been made to the variety of hosts, to which at least certain ones of the encephalomyelitis viruses adapt themselves.

AFTER DEMOBILIZATION

The late stages of the war with invasion of the Axis controlled regions and subsequent demobilization of armies and movements of civilian population groups constitute important factors in determining a widespread migration of tropical diseases. It is inescapable that members of army and navy personnel will transport foreign infections into areas in which they have not previously been endemic or important. Similarly it is highly probable that cessation of hostilities will be followed immediately by mass emigrations of oppressed civilian populations from many Axis occupied countries. Among many of these certain tropical diseases have long been endemic and others will probably have become established. Potential reservoir hosts and efficient vectors are readily available in many areas nonendemic in the past. In addition, efficient vectors may well be imported and new animal reservoirs established.

There is ample precedent for such possibilities. These factors, moreover, are additive. If they become operative it is inevitable that they will considerably augment

the human reservoir or seed bed of disease and profoundly alter present geographic distributions. The consequent migration of tropical diseases may be extensive and will certainly exert a great effect on public health practice and the practice of clinical medicine in many parts of the world.

It would appear, therefore, that the United Nations must face and accept a grave medical responsibility in the oppressed areas. To the obvious and well recognized need for provision of foodstuffs and clothing to combat the malnutrition, semistarvation and destitution must be added the imperative need for effective control and treatment of disease. The control of tropical diseases may play a most important role in the successful discharge of these responsibilities.

DISCUSSION

Dr. Henry E. Meleny, New York: It has been shown by György of Cleveland that rats on a deficient diet in many cases are more susceptible to the multiplication of lice on their bodies; this may apply to man. Bessy and Pinkerton showed that rats on a deficient diet were more susceptible to endemic typhus virus and succumb much more rapidly than those on a normal diet. Professor Matherson of Cornell, an eminent entomologist, recently called attention to the fact that Rhipicephalus, one of the dog fleas which has been known previously only in South and Central America and in Texas, has during recent years extended apparently on dogs as far north as New York State and New England; this is one of the vectors of spotted fever. He also reported that a medical officer in the Army stated to him that he had seen airplanes landing on the Texas border from which insects in large numbers were discharged from the undercarriage when the wheels were let down for landing. This apparently is not a harborage of insects which has received great attention by immigration and army authorities in the transportation of insects from one country to another. It is also well known that Xenopsylla cheopis, the tropical rat flea which is the principal transmitting agent of the plague and of murine typhus, has been extending in this country from the Southern states northward into the Central states. This is probably the chief or only vector of endemic typhus or Brill's disease, even in New York City.

We already have in New York a number of cases coming from Africa of estivoautumnal malaria. It is possible that the strains of that parasite from Africa are more virulent than those that we have in the United States. We have the vectors of malaria in at least the suburbs of New York City and certainly all through the northern United States. It is easily possible that more virulent strains of Endameba histolytica, perhaps such as those occurring in the Chicago epidemic, which was water borne, will be imported from Africa to this country by our troops and be the seeds for extensive epidemics occurring under insanitary conditions of plumbing in this country. Finally, we have to think of the possibility of our enemies deliberately introducing infected vectors or at least vectors of disease into areas in which we shall be operating. The Japanese have already been accused of dropping plague infected fleas in China. It is interesting that the islands of the Pacific, which were under Japanese mandate before the war, are almost entirely free of Anopheles mosquitoes and therefore free of malaria, but it is possible that either by accident or by deliberate action Anopheles mosquitoes might be introduced into those islands when the Japanese abandon them, or that even Hawaii might be exposed to Anopheles and introduce malaria where it has been absent.

These are concrete illustrations of the potentialities of the spread of disease from the tropics to temperate zones. It is worth noting that this country itself is not without the possibility of spreading such diseases which come back in our combat troops, even to Central and South America.

EPIDEMIOLOGY OF INFLUENZA

THOMAS FRANCIS Jr., M.D.
Professor of Epidemiology and Chairman of the Department of Epidemiology, School of Public Health, University of Michigan
ANN ARBOR, MICH.

The long history of influenza scarcely warrants its consideration as a wartime disease. But, because of the great frequency of military operations and the numerous occurrences of influenza, little juggling would be required to show that outbreaks of the disease have synchronized with one or another of such disturbances. Nevertheless the severe outbreaks of 1830-33, 1836-37 and 1847 were not accompanied by major international strife. The pandemic of 1889-90, occurring in years of apparent Victorian tranquillity, was, however, associated with one of the greatest calamities of modern times—the birth of Adolf Hitler. Despite the fact that war and influenza had not been historically related, the appalling pandemic of 1918 in the last months of an exhausting conflict has served irrevocably to indicate that virulent influenza coinciding with the massive upheaval of a population through war may be more devastating than war itself. In a period of a few months 20 million people perished, 548,000 in this country alone; the number attacked was 50 times as great.

The profound impact of that devastation has left the impression on many sides that the pandemic of 1918 was the true picture of influenza. It is a peculiar situation in which the most unusual episode in the history of a disease would be considered the typical. It might be asked with greater reason whether the 1918 occurrence should be called influenza. Consensus of opinion, however, has concluded that in its major features the pandemic of 1918 resembled that of 1889-90 and the succeeding years as well as the later ones of 1920 and 1926. According to Jordan, the features on which these conclusions are based are "the agreement in high morbidity, measurable increase of pneumonia mortality, and general clinical resemblances." Again: "The chief distinctions between pandemic influenza and interpandemic influenza appear to be that the former is disseminated rapidly over a wide area while the latter is more limited in its distribution and appears to spread from point to point more slowly, if at all; that the effect on the mortality from pneumonia and tuberculosis, and on the birth rate is usually less marked than that of the pandemic disease; that the age-specific mortality rates are different and that the prevalence of the pandemic disease is not notably influenced by weather or seasonal conditions." The differences enumerated appear to be those of degree—quantitative differences of broad epidemiologic rather than of specific clinical or etiologic nature. Application of the same criteria to the pandemics of 1889-90 and 1847 reveals significant variations between them and the 1918 experience. If the latter, therefore, is accepted to be essentially the same disease as the other occurrences mentioned, it seems reasonable to include epidemics of the past ten years as well. Instead of classifying outbreaks of similar clinical and epidemiologic appearance as separate diseases according to severity and extent, influenza would be considered a disease possessing basic, essential characteristics, varying in amplitude and clinical severity

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in different visitations and caused by agents of similar pathogenic properties which may differ qualitatively and quantitatively. This concept of the epidemiology of influenza tends to bring it into line with principles which underlie the ebb and flow of other epidemic diseases of man transmitted by the respiratory route. In addition, evidence gained through etiologic identification of the disease in recent years appears to fit that pattern.

RECENT EPIDEMICS

Ten years ago Smith, Andrewes and Laidlaw reported from England the isolation in ferrets of a virus from patients observed during an epidemic of influenza. In the late summer of 1934 their evidence was first corroborated by the recovery in this country of a strain of the same virus from a widespread epidemic of influenza in Puerto Rico and, as the disease spread across the continent during the winter and spring, from cases in New York, Philadelphia, New Haven and Alaska. In July 1935 virus was isolated from an outbreak in Australia. Since that time investigations have extended to all parts of the world and many facts concerning the disease—now called influenza A—and the virus have been disclosed. Up to now each second year has witnessed the prevalence of influenza A.

In December 1936 a sharp epidemic of influenza A was identified in New York City and spread rapidly thereafter through the United States. At about the same time the disease was recognized and became widely disseminated through Europe, eastern Russia, China and Japan. Virus of the same type was recovered in laboratories operative in all these areas. Moreover, there was agreement among observers that the disease possessed the attributes which led unhesitatingly to the diagnosis of influenza. The onset was sharp, the epidemic climbed rapidly to a peak and subsided promptly; the incidence was high, though not accurately determined, and the case fatality was low. The clinical picture was relatively uniform with a moderate number of pulmonary complications. That the virus was virulent is shown by the fact that it was readily transmitted to experimental animals of various species. It seems warranted, therefore, to consider the epidemic of 1936-37 an example of a pandemic distribution of influenza.

In 1938-39 influenza A was again present in this country and in Europe during the winter season. It differed from the preceding prevalence in that the general incidence was slight and, owing to the scanty distribution through the general population, the epidemic tendency was most evident in institutional groups under close observation. Nevertheless, patients presented essentially the same clinical picture as that seen in 1936-37. The mild character of the human disease was reflected in the low pathogenicity of the strains for experimental animals. In July 1939, however, Australia, which significantly had escaped the 1936-37 pandemic, witnessed a widespread, moderately severe outbreak in the general population and influenza virus type A was readily obtained from affected persons.

Once more, in 1940, influenza A was recognized in the West Indies and South America during July and August and somewhat later in Australia and Hawaii, whence it reached the western United States and spread progressively eastward in the winter of 1940-41. In England a scattering of cases was noted. The strains of influenza virus type A recovered in our laboratory were of moderate pathogenicity, but those which were isolated in England and Australia were said to possess little virulence for experimental animals.

Thus from late 1938 through the early months of 1941 reports from observation posts in different parts of the world tend to indicate that instead of a number of unrelated mild occurrences there was a somewhat continuous prevalence of influenza A traveling in a circuit irregularly related to the colder seasons in the temperate zones but present in the summer months of subtropical areas.

In a period of five years influenza A varied in its appearance from a sharp pandemic distribution to what, in terms of the larger geographic area, might well represent an endemic state with intervening epidemics of moderate degree.

In addition to the five established occurrences of influenza A, two well distributed prevalences of respiratory disease were encountered which clinically and epidemiologically resembled the previously identified epidemics of influenza. The first of these was originally recognized in California in January 1936 and extended eastward through the United States. It was impossible, however, to obtain any evidence relating it to type A influenza virus. In the first months of 1940 a moderate epidemic was observed in the Southeastern states, but again etiologic studies failed to show a relationship with influenza A. Shortly thereafter, as the disease appeared in New York, a new strain of virus was recovered which was adapted to animals with great difficulty and was shown to be quite distinct antigenically from influenza virus type A. It was called influenza virus type B. By serologic means it was then demonstrated that epidemics of 1936 and 1940 in the United States were influenza B. A strain of virus recovered at the same time by Magill has also been shown to belong to type B and the influenza of that year in other parts of this country has been clearly established as influenza B. In addition, the disease was found to have appeared in the West Indies in the summer of 1940. Subsequently evidence has been obtained that the virus was circulating in Australia in 1938, New York in 1938-39, Minnesota in 1939, England in 1939 and Argentina in 1941.

The disease influenza B obviously has been worldwide in distribution. Moderately severe epidemics have been related solely to this type of virus; in other prevalences of a milder nature it has been causally related to the outbreak but not present in the majority of cases selected for study; still other outbreaks of influenza have been shown to be made up of interspersed cases of influenza A and influenza B. In addition, most observers have noted occasional instances of serologic responses to virus of both types, although no other evidence of simultaneous double infection is yet at hand. The variations in distribution of influenza B have extended, therefore, from nationwide outbreaks of moderate severity to those resembling a mild endemic disease.

No sharp clinical and epidemiologic differentiation between the two diseases is available at the moment, nor has any well defined difference in the pathologic changes induced by the two types of virus been recorded. Immunologically they are, however, quite distinct. Infection with one elicits neither specific antibodies nor immunity to the other; repeated inoculations fail to induce cross reactions between them. The anti-

gen which reacts in the complement fixation test, while common to dissimilar strains of the same type, does not react with serum of heterologous type. From the point of view of immunity, therefore, the two diseases must be considered independent factors in the epidemiology of influenza.

THE VIRUS AND IMMUNE REACTIONS

The relative inconstancy in virulence and pathogenicity of the virus of influenza A might well be considered sufficient to account for the modifications in scope of its recurrences if the different strains of the virus were serologically identical. But in 1936 Magill and I were able to demonstrate that this is not the case. In fact, variants of such diversity that they can be clearly distinguished by serologic and cross immunity tests have been identified. Throughout the studies the suggestion appears that strains present in the outbreak of one year more closely resemble one another than strains recovered in different years. That they are members of the same type, however, is shown by the fact that an adequate course of immunization or a full serologic response to one strain embraces practically all others. The type relationship is further demonstrated in that the antigen which participates in the complement fixation reaction is the same for all strains of type A but differs from that of type B strains. The extent to which antigenic variations of this degree may account for reappearances of the disease is not established; the likelihood must be seriously considered. The immunologic distinctions between the viruses of types A and B are, however, so sharp that the prevalence of one would be uninfluenced by specificity immunity to the other.

Despite the strain and type differences, the characteristics of the disease produced remain so similar that the agents may be considered a pathogenic unit. Infection is induced by way of the respiratory tract, where, after an incubation period of twenty-four to forty-eight hours the epithelium of the respiratory passages is selectively attacked and destroyed, following which the extensive pneumonia of the fully adapted experimental disease develops. That the severity of the disease may be decidedly enhanced by the addition of pathogenic bacteria has been clearly demonstrated by Shope's studies in swine influenza and the observations with human strains and hemolytic streptococci in ferrets. Recently Glover has reported that hemolytic streptococci were transferable by the air route to normal ferrets from animals infected with the two agents but not from ferrets infected with the bacterium alone.

The animal which recovers from the virus disease develops circulating antibodies to the virus and a stanch immunity which persists for a period of months and then wanes to leave a modified resistance. In this stage the animal responds to reinoculation with fever and nasal signs and the respiratory epithelium is again destroyed but the typical pulmonary lesions do not develop. On the other hand, animals which have been repeatedly inoculated develop a broader resistance which persists for a longer period of time and which, serologically, is effective against more divergent strains. There is reason to believe that the susceptible tissue is also modified so as to be more resistant to virus attack, under which conditions dependence on antibodies would decrease. The human subject responds to infection with the development of circulating antibodies and presumably with immunity. The duration of immunity in man is not known, but presumptive evidence indicates that an acquired resistance exists for a year or two at least. Nevertheless the fact that a high percentage of individuals possess antibodies to virus of type A and that a large proportion of those who take sick have circulating antibodies at the time they become infected is a clear indication that antibodies acquired through previous infection with virus of the same type do not bestow an immunity of prolonged duration. It has been observed, however, that in general the antibody titers of patients in the acute stage of illness are lower than that of the average individual who does not take sick and the natural suggestion is that resistance is proportionate to the antibody level.

Inoculation of virus by routes other than respiratory does not, but for exceptional circumstances, produce disease. On the contrary, among experimental animals it results in the acquisition of resistance and the appearance of antibodies. In the human subject antibodies are also stimulated and the assumption is that resistance is thereby increased. This inference is supported to some extent by direct experimental infection of human subjects and the observation that those individuals in whom infection was induced constituted in the main those with the lowest titers of circulating antibodies.

MORBIDITY AND MORTALITY

The speed of development of an influenza epidemic and its rate of dissemination are attributable to the short incubation period of the disease and the numerous sources of infection afforded by frank cases, persons in the incubation period of the disease or in convalescence, and a relatively high proportion of subclinical infections. From patients in each of these stages virus has actually been recovered. Moreover, the incubation period of twenty-four to forty-eight hours has been thoroughly established by accidental and purposeful infection with virus. Morbidity is related to the infectiousness of the virus and to the number of susceptibles made available through births, migration and the increment of the population which has lapsed from immunity to relative susceptibility. Obviously, that proportion will vary inversely with the virulence of the virus. Using different strains of influenza virus type A for experimental infection of human subjects, Smorodintseff and his collaborators noted 10 per cent clinical disease, Chalkina 20 per cent, Burnet and Foley 20 per cent and Stokes and Henle 35 per cent. With a modified strain of the same type we failed to observe any clinical signs of disease, though serologic responses occurred in part of the test group. The varying incidence of the disease, therefore, does not of itself denote a different cause.

Contrary to common opinion, influenza does not most commonly affect adults. Where proper data are available the evidence shows that in the epidemics of 1918, 1920 and 1928 and the epidemic of influenza B in 1936 the highest attack rate occurs in the ages below 15 years and that thereafter a gradual decline in incidence takes place. If the presence at different ages of high titers of neutralizing antibodies to influenza A virus is taken as an index of recent infection, the same trend occurs. The fact that the majority of individuals, including children and adolescents, escaped infection suggests that the disease of 1918 was etiologically related to earlier infections which were responsible for the immunity.

On the other hand, age distribution of case fatalities in 1918 follows another curve. In children, among

whom morbidity was highest, case fatality was lowest; in the higher ages, in which incidence was lowest, the highest case fatality occurred; while in the intermediate years both high incidence and high case fatality were observed. Morbidity and mortality are therefore independent measures which may vary in different epidemics creating wide differences in scope and severity. The former depends on the infectiousness of the virus, the latter on the extent of the primary injury, the virulence of accessory bacterial agents—in brief, on the severity of the pulmonary complications. They scarcely constitute bases for suggesting fundamental differences in the causation of the disease.

Pandemic influenza seems therefore to represent in most respects a modification of a disease caused by a virus similar to those at present identified rather than an unrelated infection arising spontaneously in a population. The influences which determine the transformation are not fully known. A number of complementary variables decide the character of an epidemic. A change in virulence, a modification in type or strain of the virus or the prevalence of pathogenic bacteria may, each or all, contribute to the effect and must be considered in preparing to meet such an event.

CONTROL MEASURES

Efforts toward control have centered to a large extent on the development of a satisfactory vaccine for subcutaneous administration. Although resistance can be produced in animals and antibodies induced in man by a variety of preparations, evidence of the protection of man against the natural disease is inconclusive. There are, nevertheless, suggestions that the severity of the disease may be reduced and the complications limited. This of itself would be no mean advantage. Even if it should be true, one is confronted with the problem of variations in the virus and the possible necessity of incorporating in the vaccine virus similar in composition to the one in circulation. For this reason it is necessary to be on the alert for earliest evidence of the nature of an outbreak. If the virus could be isolated quickly, its introduction into a vaccine would not be difficult. But the time relations are extremely important.

In addition to subcutaneous vaccination, the possibility of passive immunization by the use of serum intranasally is being explored. For this purpose serum can be collected beforehand or obtained from convalescents early in the epidemic period and used on other exposed susceptibles. Intranasal vaccination with virus itself offers another approach.

A different concept of control is presented in the form of physical or chemical barriers which serve to prevent the transfer of infectious material, viral or bacterial. Of these the aerosols offer the greatest promise because of the simplicity of their application and their adaptability to a wide variety of conditions under which crowding and air contamination are extensive. The efficacy of sulfonamide compounds furnishes great confidence that the serious bacterial complications will be susceptible to treatment and that the attendant mortality can be greatly reduced.

It is not possible to discuss the experimental data concerning relative merits of the different procedures. These comments serve only to show that efforts are being made on various lines to seize the offensive. If one or more of the procedures should prove of value in controlling influenza in its current appearances, the probabilities are that the same principles will be applicable in combating the more severe prevalences of the virus disease. For these reasons efforts must be continued and intensified.

THE WARTIME PROBLEM

Any attempt to prophesy what may occur becomes a confession of inability to define the specific circumstances which determine the severity of an expected epidemic of respiratory disease. We have witnessed on all sides the dislocation of population through the mobilization of troops, the crowding of civilians into industrial areas, the introduction of large forces into distant lands and the maintenance of the peoples of overrun countries under abnormal conditions of food and shelter. Despite these violations of epidemiologic tenets, the common infectious diseases have continued to decline without notable outbreaks. There is no assurance, however, that this state of quiescence of infectious agents will persist or that under continued physiologic stress the mechanisms of resistance will not be impaired.

Increasing penetration of areas with which inhabitants of the temperate zones have had little experience and the disturbance of native equilibriums induced thereby constitute major dangers. Such invasions may serve to stir up strains stabilized in a given environment which in fresh hosts may prove highly virulent. Theobald Smith has stated that "most epidemics or pandemics are probably due to strayed parasites . . . from either near or more distantly related hosts or from an immune group to a susceptible group of the same species or race." The eruption of such a strain would find conditions for dissemination highly satisfactory by virtue of the speed of travel and the massing of groups of individuals, presumably more susceptible because of their relative freedom from disease in recent years. An occurrence of this nature would impose a serious strain on the morale of a nation concentrated on the winning of a war. A resurgence of bacterial infections of the respiratory tract should also be taken as a warning that with their aid even milder strains of virus might produce serious disease. Nevertheless it is possible, in view of recent advances, to look forward with greater confidence to the control of an epidemic than has previously been the case.

There is a peculiar fatalism toward respiratory disease; except for the severe visitations they are too commonly considered inevitable. The increased interest of the past twenty years is an expression of growing dissatisfaction with the discomforts and economic losses they entail in all parts of the world. If the apprehension which the threat of serious epidemics arouses could be directed into concerted and sustained investigations in the intervening years, definite improvement in the usual status would take place. Among other aims adopted for the postwar period might well be included freedom from respiratory disease.

". . . none of the plagues have been extinguished. Should misfortune bring back certain conditions, these plagues would reappear from some remote or near corner where they are slumbering in a resistant population. The final suppression presupposes a world organization of human society without wars, and disarmed, such as the most pronounced idealist of today can scarcely conceive, but toward which human society must tend to survive in the struggle with animal and plant life, microscopic and ultramicroscopic." Theobald Smith said that in 1934.

DISCUSSION

DR. WATSON G. SMILLIE, New York: Pandemic influenza is the most destructive of all epidemic diseases and the most devastating. It certainly is one of the most dramatic. This is paradoxical, since the fatality rate in pandemic influenza is relatively low. But the disease is so infectious that the rate of incidence in the invaded community itself is very high. There is remarkable rapidity of spread of the disease and a high degree of communicability. In this it outranks all other contagion. The disease appears, as Dr. Francis has said, in great pandemic waves and interspersed with local epidemics. It may appear now here, as it represents a group of diseases rather than a single disease. There is one striking characteristic of influenza, perhaps the most striking of all, and that is its unpredictability. We have really no definite evidence that indicates that pandemic influenza is the same or even closely related to interpandemic or epidemic influenza.

We have no definite evidence that an epidemic pandemic of influenza is pending. We have fairly good reason to believe that there will be no epidemic of influenza this season, but we can be sure of only one thing, and that is that sooner or later a pandemic of influenza will appear. We can be sure too that we are at the present time building a highly nonimmune population, for influenza is not as prevalent a disease as we think. I was forcibly struck by this fact in the vaccination of some thirty thousand students at Ithaca with influenza vaccine, which was conducted this winter. We asked each one of these boys if they had ever had influenza or influenza-like disease. I was suddenly aware of the fact that these young men of this generation have not had influenza. Practically all the faculty remembered well, of course, the pandemic of 1918 and could describe their experience, but the young men of this generation—and it is now, of course, a full generation, being twenty-five years since the last great pandemic—have not had influenza.

It is rather what we do not know about this disease than what we know that is of great importance. What do we not know about influenza? Where does it come from? Why does it spread with such rapidity and virulence? Why does it stop? Certainly there is nothing that man has been able to do or to devise that would check the spread of the disease or lessen its virulence. Much information has been determined about epidemic influenza in the last twenty-five years. We have learned that the disease spreads through the air, but only for a short distance. Wells's studies have shown that in a closed air chamber the virus will remain suspended in the air for at least two hours without losing its virulence. There is some hope that there may be a reduction of intensity of exposure to the virus if the air may be sterilized in an enclosed building, as shown by Dr. Robertson in his air zone work, where large numbers of people are assembled, as in barracks or on transports, in theaters, office buildings, schools and the like. There might be some hope of checking the degree of exposure by this technic, but in the face of a great pandemic this method would have little usefulness.

The only real hope, obviously, of checking the spread of the pandemic would be the building up and the development of an immune population. In theory and by analogy this would seem quite feasible, but the great difficulty is that we have no certainty as to just what the cause of pandemic influenza is. It is my strong feeling that Dr. Francis is right when he says that in all probability it is closely related to epidemic influenza. One of the reasons I think so is that I was in a tropical community at the time of the last great pandemic. Those of you who have experienced influenza, the pandemic influenza in this country, have no conception of what pandemic influenza means in a tropical or in an isolated community. It sweeps the whole population before it, and the city in which we lived became a city of the dead. Not a wheel turned, not a factory ran, not a physician was on his feet. The place was devastated. It was like the story of the Great Plague, and all that one could hear would be an occasional wagon going by in the street with the old bell and the man shouting "Bring out your dead!" It was not at all as Dr. Francis indicated; it was not in relation to age distribution of the disease. The data that he mentioned were collected in a temperate zone and in a civilized community. But in areas, isolated areas, where pandemic influenza struck, all ages were affected to a like degree. Once I visited the village of Okkak on the Labrador coast. When pandemic influenza struck that village it wiped it out. The Moravian missionary and his wife told me that they spent the winter there with a village of the dead. Where a community has had a certain degree of exposure in the temperate zone, a civilized community, a relative degree of immunity is built up. This makes one think that there is a mosaic of overlapping antigens which produces a relative degree of community immunity to epidemics.

We have new experimental technics, we have new knowledge; particularly do we have a newer understanding of the nature of virus diseases. All this has developed in the past twenty-five years. Certainly we are ready to attack influenza intelligently when it comes. It probably will require at least one more great pandemic before the true nature of this disease can be determined. There is little reason to hope that any effective means of prevention can be developed before that time.

MALARIA AS A WORLD MENACE

L. T. COGGESHALL, M.D.
Professor of Epidemiology, School of Public Health, University of Michigan
ANN ARBOR, MICH.

The subject of malaria as a world menace at the present time should not imply that this is a controversial topic. During more normal periods it is generally considered that malaria is the most prevalent of all diseases and probably ranks foremost as a cause of morbidity.

Many have prophesied the complete control, or even eradication, of malaria on the basis of the fact that the plasmodia and their vector, the anopheline mosquito, are vulnerable to attack at many points in their complicated life histories. But thus far the methods of malaria control designed to destroy or curb the larval and adult development of the malaria-carrying mosquito, the attempts to quarantine man from the mosquito and to prevent or cure the disease in man by chemical agents have not, singly or in combination, succeeded in removing malaria as a world problem. As Surgeon General Parran of the United States Public Health Service has recently stated, "outside of the mental diseases there is no other disease of comparable importance against which we have made less progress during my generation."

Accurate figures on its morbidity and mortality are not available, but a few of the more carefully prepared estimates furnish ample evidence that it is one of the great medical problems of our time. In India the director of the Malaria Survey reported in 1935 100 million cases resulting directly in a million deaths. A thorough study of a recent epidemic in Ceylon revealed that in a population of 5 million persons there were 1½ million cases, resulting in a mortality of seventy thousand. This epidemic occurred in a country in which the endemic rate ordinarily is not appreciably less than the epidemic rate. It is not unusual to read reports of malarial surveys in countries where the rate of infection is 100 per cent of the population. In the United States it is probable that there are a million cases annually, resulting in five thousand deaths, although inaccurate diagnosis and lack of proper vital statistics make this a very rough estimate.

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ASSOCIATION OF MALARIA WITH WAR

All the conditions which enable the disease to maintain this unenviable position are present during wars and in addition a new group of epidemiologic factors appear which greatly accelerate its acquisition and dissemination. There is such a close association between war and increased malaria that the term "war malaria" has become justifiable. This relationship with its disastrous effects can be demonstrated in practically any war, but the malaria of World War I furnishes all the needed examples. At that time the malarial problem was unusually severe in the Italian, East African, Mesopotamian, Palestinian and Macedonian theaters of operation. The British troops were in Macedonia early in 1915 and by June they had only 90 cases of malaria. However, the number steadily grew and during 1916 they had at least 30,000 men down with the disease. By 1917 the number had increased to 70,000 and in 1918 they invalided home 25,000 of the more serious cases. In the same area the French had only 20,000 able bodied men in a force of over 100,000. As a matter of fact the commanding general informed the War Office that his army was hospitalized with malaria. Fortunately the Central Powers fared no better. In the other areas cited, the same situation prevailed and approximately 25 per cent of the personnel of the opposing armies were acutely ill with malaria a major portion of the time.

Malaria does not confine its effects merely to the war zones but invades the homes of the returning soldiers. Again in the last war secondary cases appeared throughout England, and on the North German coast at Emden there was an epidemic of 6,000 cases. In Russia one of the greatest malarial epidemics in modern times developed in 1923 among the impoverished civilian populations. The Red Cross reported 3 million cases in the republic west of the Ural Mountains. Some cases appeared in Archangel and, as Hackett states, "for the first time, as far as we know, the King of Tropical Diseases set foot within the Arctic Circle." Thus we see illustrated from this brief account of malaria in the last war the two great problems, first the acquisition of malaria in epidemic proportions in the military forces, second and more important, its scattered transfer to the larger susceptible reservoir of civilian hosts.

Our experience in World War I did not impress us with the seriousness of the malarial problem because our troops were primarily concentrated in the nonmalarious zone of northern France. Actually there were only thirty-six deaths officially credited to malaria from April 1917 to November 1919. The highest case rates came from noncombat areas and for the entire war there were only 88 per thousand from Panama, 25 per thousand in the Philippines, 4 per thousand in the United States and 0.4 per thousand in Europe.

In the present war we have already felt its grave effects. At the fall of Bataan, for example, it was estimated that 85 per cent of every regiment had acute malaria. Contrast this figure with the 25 per thousand in the Philippines during the last war and you can see the difference between combat and peacetime operations or, rather, the difference between the last war and the present one. More than 50 per cent of our men have contracted malaria during their relatively short exposure in some of the islands in the Southwest Pacific. In Africa malaria has been one of our principal medical problems and many have already been invalided home because of repeated attacks. This is just a start and as time goes on we cannot expect that the malarial picture will wane.

FACTORS MAKING MALARIA AN IMPORTANT HAZARD

Let us analyze the various factors that make malaria the outstanding hazardous medical problem of the current and postwar period. Undoubtedly the most important factor is the location of the troops. Men have chosen some of the worst disease-ridden corners of the earth as theaters of combat. A major proportion of our troops overseas is in tropical areas in close contact with the huge native malarial reservoirs. If we ever approach the proposed figure of eleven million men in the armed services, which means practically one half of our adult male population, and if the same proportions are to serve in the tropics as now, then we can gain some appreciation of the probable consequences. The men will be located in Africa, the Middle East, China and the Southwest Pacific, where cursory surveys reveal a major percentage of the civilian population affected with malaria. For example, in Liberia 90 per cent of the children under 5 years of age have positive blood smears, most of them harboring the gametocytes necessary to infect the mosquitoes. Many die before acquiring resistance to the disease. Even 70 per cent of the adults are continuously infected. These adults represent the survivors and have developed a tolerance for the disease, as they are in apparent good health yet maintain an intensity of infection that would incapacitate the white man. The rates cited in Liberia are not excessive for most of the other tropical areas. Not only are the large infected reservoirs available but also the other requisites for transmission, namely efficient vectors in excessive numbers. The most dreaded vector of all, Anopheles gambiae, is particularly prevalent in Africa. It is a domestic mosquito and constantly migrates between the source of infection in the native huts and the barracks of the susceptible soldiers. In other places there is no lack of available vectors, particularly in India, where there are probably twelve suitable species. The combination of infected reservoirs, accessible efficient vectors, climatic conditions favorable for year-round transmission and a ready supply of susceptible hosts can only result in a high incidence of malaria in our army. As mentioned previously, reports from the various war areas show that our forces are acquiring malaria at an excessive rate, probably more cases per day than we experienced per year in the last war.

ATABRINE AND QUININE

The administrative medical officers of our armed forces have realized the danger and for the first time are making serious efforts to curb the infection. Malarial survey and control units are being formed, given special training and sent to the battle areas where the problem is most acute. In these combat zones control efforts will largely be limited to the use of nets, insecticides, sprays and suppressive drugs. In spite of the most efficient application of these measures, it will be difficult to diminish the incidence appreciably. Even

in many static areas the problem is not easily solved in spite of the fact that the malariologists are applying every control method known. The medical officers are handicapped by certain deficiencies of their tools, particularly in prophylaxis and treatment. We now have available only atabrine for its suppressive effects of the clinical symptoms of malaria, as the limited supply of available quinine must be used for treatment. Recently considerable emphasis has been given to the fact that atabrine does not prevent the inception of malarial infection but only its acute manifestations. Actually it is not a perfect suppressive drug. For example, during a carefully controlled investigation in a highly endemic region of West Africa late last year Findlay found that there were 125 clinical attacks of malaria in 322 men, or 45 per cent, between July 1 and November 6, and all had taken the prescribed prophylactic dose of 0.4 Gm. per week. With the exception of Corregidor and Bataan, where no drugs were available near the end, all of our excessive rates are occurring in men taking atabrine routinely. Quinine likewise is only a partially effective suppressive drug.

When used for their therapeutic effect, neither atabrine nor quinine will eradicate an infection. They merely control the acute attack and, if an individual succeeds in throwing off the infection, it is by the effort of his own defensive mechanism. Some attention has been given to a recent article entitled "Enter Atabrine, Exit Malaria." A more appropriate title would have been "Exit Quinine, Enter Atabrine," as atabrine is as effective prophylactically and therapeutically as the rapidly diminishing stock of quinine, but it will not cause an infection to disappear. It is clearly evident, therefore, that as yet we have no drug that will prevent or reduce the large volume of malaria that is constantly increasing.

FURTHER OUTBREAKS

If the damage were solely confined to the troops in the affected areas the problem would be serious enough to cause considerable apprehension. Unfortunately this is just the initial step in the chain of events that is likely to create a more serious disaster. The return of infected troops to hospitable territory is likely to result in the initiation of serious epidemics, especially in those places where control efforts are lax because of the absence or low incidence of malaria. We have already referred to the secondary eruptions which followed the last war. At the present time we can expect more serious outbreaks if for no other reason than the increased number of infected cases. In the United States during the past few years there have been minor spontaneous outbreaks of malaria in northern California, Iowa and Connecticut. The origin has occasionally been traced to infected fruit pickers who live a nomadic life in trailers and follow the summer seasons northward. Their environment is always a tropical one. More serious disturbances have probably not occurred because the infected persons have been too few in number. Sir Ronald Ross pointed out years ago that there is a critical ratio between the number of infected cases and mosquito vectors below which the infection would die out, or a relatively small change in the ratio might produce striking changes in the malaria incidence. Throughout the United States we have an abundance of Anopheles quadrimaculatus, the important mosquito vector for this country. It thrives as far north as the Canadian border and thus the stage is all set for trouble. We have the susceptible population and the vector, and the disease seems to be on its way.

Although we have a good vector for malaria in this country and it will transmit any of three human plasmodia, there is also danger that new vectors may be introduced. It might be pertinent to question whether the mere introduction of another species would alter the picture. This can be answered by the events that transpired in Brazil in 1930, when Anopheles gambiae was accidentally introduced. There soon followed a malarial epidemic which cost at least 14,000 lives in one year, with more than a hundred times that many cases. Both malaria and vectors were already present in the same region, but this introduced species of mosquito multiplied at a prodigious rate, as it had left all of its natural enemies behind. By its numbers, therefore, it had disturbed the normal equilibrium and supplied the flame needed to ignite the ready fuel. This mosquito would probably behave in the same way should it be introduced into this country because the climatic conditions in some of our Southern states are not too different from some of its natural habitats in Africa. This is only one of the hundreds of similar possibilities. The Hawaiian Islands and our West Coast, for example, have always been practically free from malaria but now they are the terminus for a huge air traffic originating in the Southwest Pacific, where the disease is rife. It seems quite unlikely that the islands can escape an epidemic that can result in a public health and economic disaster

It may also be pointed out that it is unlikely that malaria can be a cause of much trouble in this country since the disease is already indigenous, particularly in the South. Unfortunately, the tolerance a population develops against a strain of malaria by virtue of repeated infections confers little immunity against strains from other areas. Experimental studies in cases of dementia paralytica show that an individual is immune only to that strain with which he has had previous experience. Strain or species specificity has often been noted in armies, particularly native troops who have acquired considerable tolerance to malaria in one area yet acquire multiple acute attacks when moved to other highly endemic areas.

The biologic behavior of a malarial infection aids in perpetuating the disease, as it has a tendency to produce chronic infections with frequent relapses. It is estimated that falciparum malaria, the most virulent species, has a relapse rate of approximately 20 per cent and that in spite of most vigorous treatment this percentage cannot be lowered. Vivax and quartan malaria relapse more frequently, and the infections may persist for years. As yet there is no vaccine that will immunize an individual against malaria. It is highly doubtful if an effective one will be discovered, because the disease itself produces only a state of premunition, which means that the host is immune only as long as he harbors the infection. Even then he can resist infection only to the homologous parasite. Actually it is possible for an individual to have the three human malarial infections in the same year or subsequent attacks produced by different strains of the same species. Thus the mass rehabilitation and dispersal of sick troops allow for the

establishment of epidemics over long periods even in malarious areas and there is no means of halting the spread by immunization procedures.

DANGER FROM AIR TRANSPORTATION

Another epidemiologic factor confronting us for the first time and providing a means of breaking down existing barriers is the speed and volume of modern air transportation. We are living within sixty hours of any part of the earth. With the exception of the route to the British Isles, practically all of our foreign air traffic is now originating in the malarious areas of the tropics—in the Southwest Pacific, South and Central America, the Caribbean area, Middle and North Africa, the Middle East, Russia, India and China. The airports in these places are usually located in the insanitated areas—frequently only a metal strip runway in a hacked out portion of the jungle. No matter how remote, they are usually surrounded by native villages whose occupants are being utilized as laborers and serve as sources of infection. Literally scores of these airports are being constructed, and the menace to the passengers, troops and large personnel necessary to maintain aircraft operations is a serious one. Many infections can be acquired and be transported back to malaria-free zones before the incubation period has elapsed and thus avoid detection. Another danger is the transportation of mosquito vectors, which has already been known to occur in spite of the vigorous efforts to destroy them by spraying the planes with insecticides.

SUMMARY

We must conclude that the potential danger of malaria during the present war is a greater worldwide menace than ever before. How can we prevent this possibility from becoming a reality? For the present, more energetic application of accepted methods of control must be the rule. We need not accept past failures as inevitable, but a more widespread recognition of the danger can result in more effective control effort. The stimulus will come from the secondary outbreaks traceable to imported infections. At the first sign of such episodes an all out effort should be instituted by local, state and federal authorities. If this is done early, the danger of spread can be averted. The severe Brazilian epidemic cost the Brazilian government and the Rockefeller Foundation approximately $2,500,000 to eradicate Anopheles gambiae—certainly a cheap price, at least when compared to the economic loss that would have resulted if that species of mosquito had not been destroyed, as it was spreading rapidly to new areas. It is an example of what can happen and what can be done and is a major achievement that will go down in the annals of preventive medicine.

The long-term policy must include more training centers and opportunities for fundamental research. These places must be available to the local as well as the foreign student. It seems inevitable that we shall continue to expand into the tropical areas rich in their natural resources long after the war has finished. If we do, then we must accept the public health responsibilities and malaria will always be the foremost in the picture. Actually malaria may be one of the principal determining factors in deciding the failure or success of many of our postwar plans. Certainly we have every reason not to minimize its potential dangers now or at any time in the future.

NUTRITIONAL DISEASES AS A POST-WAR PROBLEM

JOHN B. YOUMANS, M.D.
NASHVILLE, TENN.

The postwar problem of nutritional disease must be considered from two points of view, the general nature and extent of the problem and its scientific and technical aspects. The former will be determined largely by economic, social and political factors and is difficult to gage in advance. The scientific and technical problems can be defined with considerable accuracy.

The general nature and magnitude of the problem will be determined by four factors; first, obviously, the degree and duration of food shortages; second, the number of persons affected; third, the level of nutrition which at that time is considered to represent disease and, fourth, the extent to which responsibility for the nutrition of populations is accepted by responsible agencies.

DEGREE AND DURATION OF FOOD SHORTAGE

To some extent the state of food supplies at the end of the war may be forecast by the present situation. Destruction and diversion of food, and interference with production, transport and distribution have lessened the normal supplies of the world and have caused or are threatening to cause shortages. Even nations which produce surpluses find themselves limited because their products are lent to or seized by others. To offset these unfavorable circumstances, certain measures have been instituted to relieve existing and threatened deficiencies, some of them even before the war began. Increased production is feverishly pushed in many countries, even in those actively engaged in warfare. Various controls, including rationing, not only conserve supplies but equally or more important from the point of view of nutrition promote more uniform and equitable distribution. New and hitherto unexplored sources of food are tapped. The effect of such measures is well illustrated by the notably successful results in England, where increased production, fairly satisfactory rationing and control have contributed greatly to maintain an adequate food supply and lessen the dependence on lend-lease and other imports.

NUMBER OF PERSONS AFFECTED

The situation of the world's food supply has been described by Bennett [1] of the Food Research Institute of Stanford University. It may be summarized according to this author somewhat as follows: In Nazi dominated Europe there is a food stringency which in some places is sufficient to cause nutritional disease. In the large segment under Japanese control, food supplies, while they are probably deficient according to proper standards, are no worse and possibly are better than before the war. In the United Nations area supplies may be limited in some items but in general are sufficient. These estimates refer of course to gross supplies and do not take into account distribution within populations, a problem to be discussed later. Very similar estimates are expressed in more geographic detail in a

Read before the National Conference on Planning for War and Postwar Medical Services, New York, March 15, 1943.

1. Bennett, M. K.: The Place of Food in Postwar Reconstruction, read before the Institute of World Affairs, Riverside, Calif., Dec. 15, 1942

series of articles [2] in the January issue of the *Annals of the American Academy of Political and Social Science*. Recent estimates by the U. S. Department of Agriculture are that Europe, exclusive of Russia, has suffered a decline of food supplies of only 2 to 3 per cent in the past year.[3] Personal information from private sources in German occupied territory indicates little change from a year ago. What the situation will be at the end of the war cannot be known at present. It seems safe to assume, however, that large groups of people will not only have an insufficient supply of food but will have been living under such conditions long enough to have developed significant, if not gross, nutritional deficiency disease.

It is probable that the greater number of these will be in enemy occupied or controlled countries. Depending on the course of the war, the number at the end of the war may be lessened if the policy is adopted of feeding populations as they are liberated. This would decrease the stocks of those countries furnishing the food but in turn would lessen the requirements in the immediate postwar period. At that time suddenly expanded demands may require large supplies and, though they may be adequate, all the expanded production will probably be needed to meet them.

LEVEL OF NUTRITION

The third factor determining the size of the postwar nutrition problem is the level of nutrition which is considered as indicative of disease. This is a scientific factor of importance because it forms part of the basis for calculating the degree of deficiency and measuring the amount of relief needed. In practice, however, it is overshadowed by the fourth factor, which is social and economic. This level can be fairly satisfactorily defined, much better even than before our entry into the war. One measure is the required daily allowances of the various nutritive factors for which the recommendations of the Food and Nutrition Board of the National Research Council constitute an authoritative and widely adopted standard. Another is the physiologic tests of nutrition which are available for several nutritive factors. What these standards will be at the end of the war is unknown, but the tendency in nutrition at present is to consider levels of nutrition pathologic and constituting disease which in the past would have been accepted as normal, and the discovery of new and more subtle deficiencies and means to detect them suggest that our concept of nutritional disease will be broadened and the size of the problem increased.

RESPONSIBILITY

The fourth factor is the extent to which responsibility for nutrition is accepted by whatever agencies may be concerned. Obviously this responsibility will extend in various directions. What peoples will it include and how many? What classes in a population? Will it be concerned with all or only special groups? An even more difficult decision as to responsibility remains. For what level of nutrition shall responsibility be accepted? Shall it be only the emergency relief of acute starvation? Shall it be a restoration of nutrition to the level existing before the war in the populations and countries concerned or shall the task be that of establishing and maintaining nutrition at a level which is believed to be desirable by present day standards or those current after the war?

Some intimation may be had from the statements and the announced aims and policies of the heads of governments and of those who may have to do with this postwar problem. These have been well summarized by Bennett.[1] Thus, the Atlantic charter implies a freedom from want of food for all men in all lands. Mr. Churchill holds out the hope of food with freedom to the peoples of Europe. Our Secretary of State stresses the need for swift and effective action to meet pressing human needs, and the Secretary of Agriculture, Mr. Wickard, warns that to have a stable peace there cannot be widespread starvation in some parts of the world with surpluses in others. Free governments of conquered countries of Europe have announced the intention of securing food for postwar needs in liberated countries. Recently a director of foreign relief and rehabilitation for the United States has been appointed. Rehabilitation and relief must include food and nutrition. As Bennett has said, "The idea of providing adequate diets for all seems in the air." Finally, the recent plans of the National Resources Planning Board, as announced by President Roosevelt, leave no doubt of their intentions with respect to this country. A full and adequate nutrition for every one is the declared intention. It is apparent that, if responsibility is accepted to the extent which is implied, the task will be stupendous even for this country alone. It must in fact become a plan for the more distant future as well as for the immediate postwar period.

TECHNICAL AND MEDICAL ASPECT

Compared to the social and economic aspects, the technical and medical part of the problem is quite easily determined. First there is the procedure of measuring the deficiency, an assessment of the nutrition of any group which may be concerned. Such an assessment will determine the kind of deficiencies, their severity and the number of persons affected, not only for the population generally, but especially for the various classes of the population. While it might be possible simply to provide enough food of all kinds so that everybody or nearly everybody has enough, such a method is inefficient and wasteful. This is particularly true when large supplies of food must be transported long distances and distributed to large populations whose needs may vary in amount and kind. Therefore an assessment is needed. On such an assessment will be based not only the definition of needs but the proper application of relief, and such an assessment will be needed whether one is dealing with a short time relief problem or a permanent plan of nutrition betterment.

There exists at the present time procedures for the assessment of the nutrition of populations and individuals much superior to those of even a few years ago. These are physiologic tests which are capable, in some instances, of detecting and measuring slight deficiencies. However, much improvement is needed, and one of the problems facing us is the development of additional and improved tests for the detection and measurement of slight deficiencies.

REQUIREMENTS

The problem having been defined on the basis of nutritional status and need and the degree of responsibility, the requirements for either temporary relief or a long time program of improvement can be deter-

2. The Food Situation in a World at War:
Lloyd, E. M. H.: In the United Kingdom, Ann. Am. Acad. Polit. & Soc. Sc. **225**: 83 (Jan.) 1943.
Richter, J. H.: Central and Northern Europe, p. 85.
Bacon, Louis: Southwestern Europe, p. 87.
Whipple, C. E.: Southeastern Europe, p. 88.
Volin, Lazar: The Russion Food Situation, p. 89.
Ladejinski, W. I.: The Food Situation in Asia, p. 91.
Almonacid, P. N.: The Other Americas, p. 93.
3. The Nashville Banner, March 5, 1943.

mined quite accurately. As far as immediate relief of the actual deficiency is concerned, this can be accomplished quite easily and quickly provided supplies are available, as far as adults are concerned. While time is needed for the repair of certain structural defects and in some instances, severe peripheral neuritis of thiamine deficiency for example, complete recovery may never occur, in most instances the actual deficit can be made up quickly and body stores returned to normal. In all except very severe deficiency states this will promptly restore function and structure to an approximately normal state, leaving complete restoration to follow at some later time. It is necessary, however, that adequate maintenance supplies be provided to prevent a relapse and insure complete recovery, and this becomes of paramount importance for children if a permanent effect is to be prevented or lessened. There is thus introduced an important time-quantity factor. Small amounts of necessary food factors may cure nutritional disease slowly. Still smaller amounts may relieve but never cure. Unless restoration of body stores is accomplished, daily requirements may prevent the accumulation at any time of an amount large enough to relieve the deficiency. Only amounts large enough to restore body supplies to normal and meet current requirements will cause prompt relief and complete cure.

For many reasons it might be advisable to relieve the immediate deficiency of a population quickly by the administration of relatively large amounts of the necessary factors in concentrated form. Ease of distribution, advantages in transportation, great savings in time and personnel and a simpler administration could be gained by such a procedure. No such measures should be undertaken, however, except for immediate and temporary relief and with the expectation that supplies of food would replace such artificial methods.

For efficient and economical relief and correction of nutritional disease, such measures as are adopted should be varied according to needs as determined by an assessment of nutrition. For some individuals adequate supplies of usual foods may be all that is needed to cure their nutritional disease quickly. Others may require special treatment including hospitalization, the use of special food, vitamin products, and the like.

One problem in emergency relief is the effect of increased supplies of one or two dietary essentials on the needs and requirements for others. A good example is the increased need for thiamine as calory intakes are increased. Any increase in calaroies would increase the requirements for thiamine, and unless provided in a way which would carry with them increased thiamine might precipitate a deficiency of the latter. In the relief of deficiencies and nutritional disease, therefore, this phenomenon must be kept in mind and possible ill effects avoided. This is particularly important when attention is directed in the main to one or two nutritional deficiencies, and treatment is by means of artificial preparations or special concentrates of food factors unsupported by an adequate general diet.

LONG RANGE PROGRAM

The problem of a long range program of nutritional betterment is much more complex than that of emergency relief. For simplicity I shall confine my remarks to the situation in this country with the understanding that they will apply to others with such modifications as may result from the social and economic factors I have mentioned.

To me it appears unlikely that any significant amount of serious nutritional disease will appear in this country as a result of the war. Rather it is probable that increased public interest, a better distribution of essential food among the various classes of the population through governmental control, rationing and increased purchasing power, and the adoption of certain public policies in relation to food supplies and production will result in an even better state of nutrition in general than existed before the war. Such certainly seems to be the situation so far in England, where certain definite gains in nutrition of the general population seem to have been secured because of the war and despite the difficulties caused by the war. The problem will be to secure the potentially tremendous improvement over present day levels of national nutrition. What this level is no one can say accurately. Many statements and estimates are current, most of which are meaningless because they are not based on sufficient evidence or because they fail to take into account all the various factors concerned in the interpretation of assessments of nutrition. Nevertheless there are sufficient reliable studies to indicate that there is a large amount of nutritional disease in this country on the basis of standards now generally accepted. It is thus possible to secure a tremendous improvement in health. Medically it would mean the end of nutritional disease except for sporadic instances of conditioned deficiency. The gain in public health, vigor and accomplishment is difficult to estimate but would be great.

However, to attain the goal in nutrition which has been suggested will not be easy. To begin with, public interest in nutrition may lag after the war without the striking reminder of severe deficiencies. The less dramatic gain in health as nutrition approaches the optimum will not be so apparent. Continued effort at public education must be maintained, but the mistake must not be made of exaggerating nutrition. Other causes for ill health exist, and attempts to make adequate nutrition a panacea will fail as do all panaceas. Also, as Mead [4] has stressed, care must be taken in invoking the moral element in relation to food habits which in themselves constitute an important factor in nutrition. For the most part, however, the postwar problems will be problems of opportunity. There will be required, first of all, a much greater production of food. There is every reason to believe that this will exist at the end of the war. Much of this increased production may be needed in the early postwar period for supplying those populations whose production and supplies have been deficient. With peace, however, production should be increased in those regions also and cooperative effort for this purpose is already planned by the United Nations.[5] All this increase will be needed, however, if the goals of nutrition which have been set are reached. It has been estimated that even in this country it would be necessary to increase production of the more expensive foods 15 to 100 per cent to raise the dietary level of the poorest to standards of those who are even moderately well fed.[6] If this applies throughout the world, the effect on world trade, commerce and industry is obvious.

4. Mead, Margaret: The Factor of Food Habits, Ann. Am. Acad. Pol. & Soc. Sc. **225**: 136 (Jan.) 1943.

5. Marshall, C. B.: The Lend-Lease Operation, Ann. Am. Acad. Pol. & Soc. Sc. **225**: 183 (Jan.) 1943.

6. Boudreau, Frank G.: Present and Future Food Supply and Some International Implications, The Food Front, A Series of Eleven Lectures delivered in the U. S. Dept. of Agriculture Auditorium, March 11-April 15, 1942, Washington, Government Printing Office, 1942.

In addition to the production of increased amounts of food there is the problem of increasing the nutritive qualities of foods. Opportunities in this field are many, as is indicated by one example: Studies by the Department of Agriculture Regional Vegetable Breeding Laboratory at Charleston, S. C., showed a variation in the ascorbic acid of thirty-three varieties of tomatoes from 22 mg. per hundred grams to 10 mg., or less than half as much.[7] Similar differences exist on a regional basis and for other foodstuffs and other nutritive factors.

With the great increase in food production goes the problem of food storage, preservation, processing and preparation. Equally great opportunities exist in the problems of preserving the nutritive qualities of food during its progress from production to ultimate consumption. Truly great losses occur in that process at present, and a solution for this problem will go far to ensuring an improved nutrition. A case in point is again vitamin C, an adequate intake as represented by the supply in the food in the original condition often fading to the point of a deficiency before consumption. One way to obviate such losses is, of course, to increase the original content as described, but this is wasteful and a more desirable procedure is improvement in the technology of food handling and processing and in the relatively simple measures of cooking and preserving.

Despite a great increase in production, however, there remains the problem of distribution. Not distribution in the physical sense of transport but equitable distribution among all classes of the population based on need. This problem is almost altogether a social and economic one, all the various aspects of which cannot be touched on here. It does have, however, scientific and technical nutrition aspects because of the methods which may be devised to solve it. It is possible that in the desire to extend the benefits of good nutrition widely and quickly artificial means may be adopted for providing some elements of nutrition which are difficult or costly to obtain in natural ways through adequate amounts of proper food. There are, for example, the procedures of enrichment and fortification of food or food products whose general nutritive standing does not warrant them. In the same category can be placed the indiscriminate use of vitamins and vitamin concentrates by the general public and certain legal restraints, limitations and restrictions which may hinder as well as help good public nutrition. It would be very unfortunate in my opinion if they prevented or retarded progress in securing better nutrition with natural foodstuffs through the process of education and of technological and scientific development.

INDIVIDUAL NUTRITION

There remains to be considered the problem of individual nutrition, the study of which will remain the principal source of fundamental advance in this field. Although gross nutritional disease may cease to be a significant problem except for sporadic and conditioned deficiencies, the prevention of the latter as a complication of other disease is a very large problem. There will also be the influence of minimal nutritional disease on general health. New procedures for determining their effect and detecting their presence must be devised. The improved nutrition of the child will introduce new problems of demand and requirement which must be studied. Although reliable evidence of the specific influence of nutritional deficiencies on other disease has been meager, newer studies on the relation of nutrition to cellular and humoral immunity make this a promising field for investigation. Similarly the relation of nutritive factors to the intimate details of metabolic and detoxification mechanisms are of particular importance in relation to various occupational exposures and the course and outcome of other disease.

In closing, it may be pointed out that the problem of nutritional disease is much like the problem of syphilis. Both can be eradicated or nearly eradicated. Scientifically the means are quite simple and quite clearly defined. It cannot be accomplished, however, without the cooperation of many agencies, scientific, medical and social, working together on an adequate plan with vision and with courage.

7. Auchter, Eugene C.: Nutrition Begins with the Soil, The Food Front, A Series of Eleven Lectures delivered in the U. S. Dept. of Agriculture Auditorium, March 11-April 15, 1942, Washington, Government Printing Office, 1942.

DISCUSSION

DR. C. G. KING, Scientific Director of the Nutrition Foundation, New York: The social and economic factors are more staggering as we approach them at present than the purely scientific factors. First, we should recognize as a nation that we do not have true food surpluses in the proper sense of the word if we are speaking in terms of the problem of adequate nutrition for our entire population. We have wrong balances, we have deficiencies of the commodities most needed, we have surpluses of other commodities. We surely do need long range planning and approach not only in our own nation but to the worldwide problems in nutrition. How much of our nutritional problem is properly classified as nutritional disease? It seems to me more broadly a problem of nutrition. When we get into the area of the degree of malnutrition that is most prevalent in America, there can clearly be a question of definition, of whether or not it is disease.

I should like, in the next few moments of my discussion, to cite the significance of approaching the overall community problem of nutrition. We have Sir John Orr's report that in Scotland, in the midst of the war upheaval, they were able to lower their infant death rate to 20 per cent below the prewar level, even though it had been rising steadily up to the beginning of the nutrition program in 1941. We have the report of Ebbs, Tisdall and their associates of Toronto of the great improvement in the health of infants and mothers by rather simple improvements in their food supplies. We have the reports of Dr. Hazel K. Stiebeling and her associates in the Department of Agriculture indicating that approximately half of our American population is distinctly below a level that would be accepted as satisfactory in their nutritional provision. We have the concept of nutrition and malnutrition presented by Dr. Kruse, which brings in the question of time and intensity and I think really opens up a somewhat new era in the whole approach to malnutrition.

Basically, I think that most lacking in the entire picture is the provision of clear, convincing evidence to the medical profession that the nutrition problem is one of major importance in terms of health. We have a lot of these reports based on limited surveys and studies, but I have a feeling that many of the men who are leaders in the medical education field especially still have a lot of reservation of just how significant in terms of public health is this problem of nutrition. We might approach it from the point of view of the relation that nutrition has to such widespread prevalence of dental caries, to the widespread prevalence of impaired eye function, faulty eye structures, to the neurologic disturbances which have in the past been so often attributed to alcoholism, strain and other stresses other than nutrition.

We have a great opportunity ahead if we can combine the point of view and the information that the research people, working in the laboratories with experimental animals, have in their attitude toward the problem of feeding animals for their best health with the point of view taught in approaching the problem of public health in our schools of medicine. I think

it is a very fine thing that we have centers growing such as Dr. Youmans is building at Vanderbilt and Dr. Stare is building at Harvard Medical School. Out of those centers there should come an adequate training and appreciation of the human problems in nutrition analogous to the problems that the men in the laboratory have been developing over the past twenty years.

As specific indications of this carry-over, I think almost all biochemists have been impressed within the last two months with the work in Dr. Rose's laboratory at Illinois and Dr. du Vigneaud's laboratory here in Cornell Medical College showing that within twenty-four hours disturbances in the body's handling of protein can be severe by omission of only one amino acid. Within twenty-four hours Dr. Rose then put his patients back into a positive nitrogen balance from a previously established negative nitrogen balance by changing only a few grams of one amino acid. The rapidity with which those swings take place, it seems to me, would impress any one interested in normal human physiology. What significance it may have in health is indicated, I think, in a preliminary way by Dr. du Vigneaud's studies of methionine as one typical amino acid which greatly affects the function of such organs as the liver, kidney and muscles.

We need a worldwide approach to the problem because, as Dr. Boudreau has so well pointed out, the stability and health of every population in the world is a matter of major concern to all other areas and populations in the world. The Nutrition Foundation was set up by the food industry to support primarily basic, fundamental research in nutrition, but they have another aspect of their program in promoting good sound education relative to nutrition. They have a determination to work, to see that the food supply at least can make its best contribution to public health.

THE SUPPLY OF DRUGS AND MEDICAL MATERIALS IN THE POST-WAR PERIOD

COLONEL CHARLES F. SHOOK
MEDICAL CORPS, UNITED STATES ARMY

While our military, naval and marine forces are still facing the common enemy and while our merchant marine is still struggling against the hazards of the sea, it is not only fitting but appropriate that industrial and professional leadership should gather for a review of its prospects and responsibilities.

War production is our present paramount duty and will remain so until the war ends. Nevertheless there is a future, that postwar period of adjustment which should be of vital importance to us today.

My subject, "The Supply of Drugs and Medical Materials in the Postwar Period," should be expanded to include all supplies and equipment essential to the maintenance of health. Many believe that postwar planning is premature. In fact, there are many who contend that the mere thought of peace problems now is a waste of mental energy. It is questionable whether the serious thinker will agree.

One of the precepts of the Army has been "In time of peace prepare for war." How well this has been accomplished has been demonstrated in every major war involving our nation. The Army, augmented by its civilian components, has with the least practicable delay mobilized its manpower and its resources and proceeded to the task of defeating the common enemy in the quickest yet most economical manner. By that I do not mean cost in moneys but rather in the expenditure of critical manpower and materials. Such successful accomplishments could be made possible only by continued study into possibilities and the completion of plans of action. Success in any endeavor can never be accomplished without planning. Every one knows that the war is far from won. Our war budget should dispel all doubt on that point. Nevertheless it should therefore fall in line: "In time of war prepare for peace."

With the continued success of our allies, we Americans are becoming optimistic as to the future. The defeat of our common enemy appears more and more certain. Maybe not this year or even next, but our confidence has risen and we are positive as to the ultimate decision. Our many columnists, writers, economists and business executives, realizing the necessity for future planning, have begun to discuss postwar conditions. Experience is being brought out of the deep dark recesses of the past, and consideration for the future is coming to the front.

Our President has visualized this need as demonstrated in his establishment of the National Resources Board and the Defense Supplies Corporation. The former is charged not only with the husbanding of our resources but the proper utilization of them after the termination of hostilities. The Defense Supplies Corporation likewise protects our future by building stockpiles of critical materials and controlling their distribution to essential needs only.

As far as postwar planning is concerned, our Congress is naturally more interested in the international situation than domestic planning at this time.

AFTER THE FIRST WORLD WAR

Planning is dreaming, and any plan of action devised is influenced to a great extent by the personal element of the planner. Before any plan can be recommended for future action, it is best that the subject be developed by a description of the postwar period of World War I and its effect on the various industries involved in the production of health supplies.

With the sudden termination of hostilities on Nov. 11, 1918 our government was confronted with one of its greatest economic problems. Industry was keyed to its maximum production, and vast quantities of supplies of all types and descriptions were in our warehouses, en route overseas, in the hands of our troops in France or awaiting shipment from the factory. With the cessation of hostilities we no longer required actual munitions of war or to a lesser extent large quantities of maintenance and operational supplies. This flow of supplies was so well organized that its momentum could not stop over night.

Each and every plant had its problems and difficulties, and each and every type of commodity had its peculiarities. Some types of production were still required in large quantities for the operation of our peacetime army. By and large, however, we had on hand, either in the United States or on the soils of our allies, millions of dollars' worth of supplies and equipment, soon to be declared as surplus.

Then, as today, we had facing us the rehabilitation of most of Europe and, to some extent, the countries of our former enemies. The care of the sick and the wounded and the utilization of medical supplies and services acknowledge no race or creed. Humanity must be served and we, in a grandiose yet probably not in such a controlled or planned manner, turned over those surplus supplies that were overseas to a rehabilitation

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program. Mr. Herbert Hoover, who had been in charge of the Belgian Relief from the time of the invasion, wisely distributed many medical supplies in such countries as were believed worthy of assistance. At that time there were transferred to the American Red Cross approximately $10,000,000 worth of drugs, surgical dressings and other surplus supplies. Much of the material was required for the continued maintenance of our army of occupation, but a lot of it, sold in France to the French government, did find itself entering the channel of international business and competing against the patriotic industry which had produced it under the hardships of expansion, depleted manpower or material handicaps. Those stores in England were purchased by the British government. I can find no record of these goods returning to the United States. A moderate amount of medical supplies was sold to Poland, Greece, Serbia and the newly created countries of the Ukraine. Only a small quantity of technical equipment was returned, owing to cost of transportation.

Those stocks still in the hands of the manufacturer, either completed or in the various steps of fabrication, were in many instances either taken over by the government, as such, or retained by the producer.

Large stocks were accumulated and transferred to the Surplus Products Board, by which they were sold in job lots to the highest bidder, sometimes by direct sale and sometimes by auction. Warehousing was expensive, and the government was more than anxious to rid itself of this impediment. We still see evidences of our excess stocks of World War I in our many army and navy stores, where everything formerly used in the service can be procured for camping, hunting and other outdoor sports.

It has been stated that pushcarts on lower Broadway sold ointments in penny sales. (I question that the Food and Drug Administration would permit a repetition of this action.) Surgical scissors and even certain surgical instruments found their way to the general merchandise counter. Equipment passed through numerous hands to many various terminal positions.

With the advent of 1939-1943, stocks of World War materials began appearing over the country and at last the investor realized a possible market for his frozen asset, either through lend-lease or through the depleted civilian market.

Dressings, surgical instruments, including dies, jigs and forgings, field equipment and other nondeteriorating materials were made available. Some of the surgical instruments made an appreciable assistance to our allies under lend-lease.

With the return to the market of such large quantities of finished products the manufacturer began to feel its effect. Production lagged; world markets went to other countries because of lower labor costs. Only the hardiest of manufacturers were able to withstand all these reverses. Many good reliable concerns either closed their doors or came close to it with the usual attendant financial loss.

These conditions cannot be permitted to arise another time. Now that the various health supplies industries have expanded far and beyond their peacetime requirements, it is to their benefit if they start now to plan their postwar possibilities: new markets, new products, yes and even many new sources of supply with the continuation of new products encouraged by a wartime condition.

PRODUCTION FOR THE PRESENT WAR

The expansion of production from 1939 to 1943 has been quite exceptional. To meet the present war effort it was necessary that industry expand its production manyfold. Production status depends on the law of supply and demand, the restrictions placed on production by the War Production Board and the availability of material and manpower. It has been said that the Army has overbought. Perhaps that is true in a few commodities where past experience was lacking and estimates of requirements had to be based on knowledge of similar items. Perhaps certain stocks are in excess, but remember, we have not as yet gone into an extensive fighting war where stocks are depleted over night. It is much better to have overprocured and be ready than to have an empty larder in time of actual need. This war is not like its predecessor. Then we had but one front. Today we have nearly forty fronts and each must have its "pipeline" of supply filled.

Some industries required little or no expansion to care for the growing needs of our military and naval forces as well as our allies. Chief among these may be listed pharmaceuticals. Perhaps a tablet machine or an ointment mill has been added and perhaps a second shift has been required, but on the whole the pharmaceutical industry was able to cope with all our requirements and complete its deliveries in a satisfactory manner without appreciable expansion. The same may be said of several other industries allied to health supplies. There were, however, many instances in which expansion either in whole or in part was 200 to 300 per cent and even 500 per cent. True, the latter is the exception rather than the rule and involved materials or equipment either new to production or especially peculiar to warfare. These would include the expansion of such chemicals as the sulfonamide compounds, atabrine and essential vitamins, together with surgical instruments, diagnostic instruments, sterilizers and x-ray machines.

POSTWAR PRODUCTION

On the termination of hostilities, industry geared to a maximum production will not materially slow down its machine but will continue for some time.

Where will postwar production be required?

1. The equipping of educational institutions whose supplies and equipment have been materially curtailed during the emergency.

2. The replenishment of depleted retail stocks as well as an established inventory in the wholesalers' warehouses.

3. A return to the normal type of fabrication and the discontinuance of makeshift and substitute production.

4. Increased sales to professional men leaving the services and returning to civilian practice. In a recent poll by *Fortune*, 55 per cent of business executives anticipate a greater volume of business than even 1939.

5. The completion of hospital projects and the replacement of worn out or obsolete equipment. This phase will by no means be a minor one. Our hospitals have shown their patriotism through the continued usage of old unsatisfactory equipment and the practicing of rigid economy. Their financial balance is probably the best in history, and it will be their first desire to invest in durable goods.

6. Proper and supervised utilization in the hospitalization program of our Veterans Administration, the equipment going into a hospital program and the main-

tenance supplies over a general distribution. This procedure was used after World War I.

7. It can be visualized also that an organization similar to the Civilian Conservation Corps may be established to care for discharged soldiers needing positions, training or even rehabilitation. The CCC required hospitals and dispensaries, which means supplies and equipment.

8. Stocks in the territorial limits of the United States would be available for transfer to other government agencies, the American Red Cross, the rehabilitation program and certain nonprofit operated hospital groups. Also the stock level of supplies in established army hospitals and dispensaries could be raised.

CONCLUSIONS AND RECOMMENDATIONS

In the transition from war to a peace economy there are certain conclusions and recommendations to be made:

1. An act by Congress or a ruling by the President under his War Powers Act that manufacturers who filled government contracts should be permitted to repurchase any surplus materials remaining in the hands of the government after the cessation of hostilities.

2. The suggestion to Congress that an appropriate war reserve of nondeteriorating supplies and equipment be stored for future eventualities whether they are for war, flood, fire or other disasters. We should never again deplete our war reserves.

3. From 1924 to 1941 the War and Navy Departments operated what was known as a procurement planning division. Their plans were laid to determine what would be wanted in time of emergency, how much would be required and where it was to be obtained. A similar setup is recommended to any individual or group of individuals charged with the rehabilitation program. Time is essential here. The personnel to be chosen is important, but the prime factor is the proper recognition of health supplies and industries involved. We know the countries we must aid and we know the type of materials they will require, but have we any idea as to quantity? I question that any answer is available at this time.

4. There will undoubtedly be a recession in prices after the war. The retailer should be encouraged to watch his stock and not overload. Better and more substantial products will soon be on the market at better prices. Good business will watch the market closely. A price protection legislation will be as essential after the war as now, probably in the form of duty on exports.

5. The various industries involved in the manufacture of health supplies should become realistic. While many concerns have already set up postwar planning boards, all facilities should begin to study their future status in a community suddenly removed from wartime production. Research should be geared to new products, new markets both domestic and foreign, and new fields of production.

6. On the termination of hostilities, surplus stocks of maintenance supplies will immediately become evident. This is not true of equipment. Our hospitals and dispensaries will be required until after the Army has been demobilized to its authorized peacetime status. If history repeats itself, such equipment will not be declared surplus for about two years. This period should be carefully studied and steps taken to alleviate the effect on industry.

7. I cannot encourage my next recommendation too emphatically. That is the continued use of industry advisory committees to advise and assist the various government agencies in the timely and judicious handling of surplus stocks of medical supplies. A special subcommittee should be formed for just such a purpose.

In closing, let me reiterate, planning at this time for the postwar period is essential and proper planning will avoid many of the difficulties evidenced after World War I. There will be ample medical supplies and equipment available for the rehabilitation program with the possible exception of biologic products, vitamins and certain pharmaceuticals required in the treatment of diseases peculiar to a particular foreign country. To assure further the availability of supplies required overseas, it will be necessary that industry have at least an idea whether or not its products will be required in such program. With proper supervision and control of our medical supplies on the termination of hostilities, I cannot visualize any great interference with our economic setup.

DISCUSSION

LIEUT. COL. H. F. CURRIE: In his presentation, Colonel Shook mentioned one factor in the channeling of drugs and medical supplies that has been of great interest to me, and one which I think should be given further consideration—rehabilitation. The present war is unusual in that more people are involved than ever before, and destruction of matériel and humanity is shocking in its magnitude. Immediately after fighting ceases, our nation will be faced with a dual responsibility: first, Europe, North Africa and the Japanese controlled countries must be policed to prevent a reactionary crime wave and violence because of hunger and unrest. Second, we must initiate, supervise and supply needed material for the rehabilitation of those nations whose level of civilization has been lowered by the Axis. In this we can be defeated by two factors: hunger and disease. Large quantities of drugs and medical supplies will be needed. The policing of the aforementioned countries with widely dispersed naval and military units will require many medical installations and frequent replenishment of their medical supplies. This will utilize stocks of supplies then on hand. More important, however, adequate medical care must be established in the countries now being dominated by the Axis forces, and this will call for large stocks of drugs and medical supplies.

Because our present production of these supplies is regulated by a carefully planned army supply program, projecting the monthly need of medical supplies through 1943 and 1944, there is less likelihood of a tremendous surplus of supplies than after World War I.

The second problem, medical supplies for the purpose of rehabilitation, affords an opportunity for our nation to render a great service to humanity and at the same time assist our drug and medical industry in maintaining a constant rate of production during the postwar period. This can be done by utilizing the excess production made available by decreasing army and navy requirements. Immediately after the war, military requirements for production will be sharply decreased. Plans must now be made for conversion of this excess capacity of the drug and medical industry to the needs of our rehabilitation program, which will continue for years, thus allowing a gradual transition from war production to peacetime production. Such a program must be instituted immediately and must be guided by persons who know the industry, who are familiar with procurement of medical supplies and, above all, who have a broad and sympathetic knowledge of the problem facing us in the postwar period. Such action will be of material aid in maintaining a sound, economic structure in our drug and medical industry and, if properly planned and applied, the production of drugs and medical supplies will continue at a fairly uninterrupted pace on the cessation of hostilities.

In conclusion, let me impress on you the fact that the present war is far from won. We have a hard fight ahead of us. In our drug and surgical industry, first consideration must be "to give our fighting forces all they need to win." If we fail, there will be no need for postwar planning.

MAJOR HOWARD F. BAER: I take it that Colonel Shook's paper is more directly aimed at industry than it is at medical service in general, and I know, because I have heard some of you express yourselves to that effect, that many of you in the audience, representing industry, are concerned with what will happen to the enormous quantities of materials which the government is today purchasing. I think it is only natural that you should be concerned, because the quantities in many ways seem fantastic—and yet I, for one, speaking as a former member of the surgical supply industry, feel that that concern is needless. You have heard several sound recommendations from Colonel Shook as to certain protective safeguards that should be set up for industry and you have heard Colonel Currie say that worldwide rehabilitative necessities will use up these materials. I think it may safely be said that what the industry needs is a constructive, rather than a protective, outlook. Right now, sitting here, you are bothered that such large quantities of material will be thrown on the market that your industries will be badly crippled. I believe that fear to be groundless. In the first place, we must all agree with Colonel Currie that there may be no surplus products because of the world's needs. But suppose these things do not come to pass and suppose there are large quantities which the government would decide not to keep but to throw on the market. I submit that even this would not be harmful. Colonel Shook has discussed what happened to surplus materials that were thrown on the market after World War I, but I submit that the greatest growth in the surgical, pharmaceutical and laboratory industries the world has ever seen occurred in this country from 1920 to 1940, in spite of the merchandise which the government sold at auction. Indeed, it would be easy to argue that at least some of the growth occurred because of the goods thrown on the market—but as for that, there is no time. So, I think industry needs to get rid of these fears, first because domestic and worldwide demands will be too great and, second, because large quantities will be kept by the government (as Colonel Shook has indicated) and, third, because even if some substantial proportion should reach the local market, disaster will not result.

There are two other points which Colonel Shook has made, which I think worthy of elaboration. He has indicated that price control legislation will be as essential after the war as now. If he will allow me to disagree, I hope that will not come to pass. To begin with, there is no actual price control legislation in this country other than price ceilings and the fair trade laws permitting the manufacturer to set his own resale price. Any further extension of price control legislation, particularly in this field, would be likely to stifle growth. The entire health supply field is expanding. The close of the war will see the industries participating in this conference standing on the threshold of new avenues of exploration and growth. Those who feel that price protection is necessary for the exploration of these avenues do not understand that all economic history has proved that a free market encourages developmental research and improvement.

The last point is this matter of conversion to peacetime production, which Colonel Shook has discussed so elaborately. In this connection there is one point which seems to me is well worth making. He has indicated that some of your industries required little or no expansion to convert to war. True, he has said that others have had to expand as much as 500 per cent, but he has further indicated that on the termination of hostilities it will not be necessary for industries materially to slow down. I wonder if we all realize how different your situation is from most others. Ordnance, aviation and shipbuilding to a large extent were created out of thin air. A great many war industries are producing not wealth but engines to destroy wealth. When the war stops they must cease operations nearly 100 per cent. The wealth of our country lies in our ability to produce material useful for peacetime better living. If our industries here assembled have expanded, then so much the better—for you have expanded for the production of wealth creating materials, not for the production of destruction and debt.

No one can foresee the shape of things to come; none of us can see what economic patterns our country will adopt in the postwar period; but we do know that a large part of our population, and a much greater part of all the populations of the world, have been underprivileged healthwise; and so it would seem very ill chosen pessimism, indeed, to worry because your industries may be geared up too heavily for our present horizons. I, for one, have no doubt that we shall see many new horizons before we are much older.

COL. C. F. SHOOK: I think I should like to clear up one thing, and that is some control over supplies. After the last war, if I am not mistaken, and I think most of the surgical instrument people will agree with me, there were great inroads of German instruments into this country as the result of cheap labor. The German government gave a bonus or wrote off certain amounts of money so that they could compete with our duty. That is what I was referring to in financial regulation. I believe that, as our present laws stand, anything manufactured in the United States can come back duty free. We don't want to see those instruments, as in the last war, where we paid $175 for an operating case, come back and be sold for $17 and then go out on the market for $50. But it did happen in the last war.

POSTWAR NEEDS FOR MEDICAL AND OTHER TRAINED PERSONNEL

EDWARD C. ELLIOTT, LL.D.
President, Purdue University; Chief, Professional and Technical Service, War Manpower Commission
WASHINGTON, D. C.

I am not a physician and therefore, here in the presence of physicians, must speak with humility and with a certain self-protective caution.

I am not a prophet and therefore may not presume to lift the curtain of time that separates the world of the present from the world of the future.

I am not a protagonist and therefore possess but little of the crusader's zeal for the winning of followers of ideas fashioned to save either a part or the whole of mankind.

I am not a member of the immediate family of Pollyanna and therefore am not exposed to the hazard of a soft optimism.

I am not a pessimist and therefore am not armored against a dynamic faith in the intelligence and disposition of men to proceed promptly to salvage good from the evil and destructive days in which we are.

I am, however, commissioned to represent in this place the professions of learning, the preparation for which requires time and talent and tasks of those who would learn for a purpose. This commission obligates me to serve as a coordinator of the physician, the prophet, the protagonist, the family of Pollyanna, the pessimist and, perchance, the patriot. Not, let it be hoped, that sort of coordinator who, according to one of my waggish Washington associates, merely transforms "organized chaos into regimented confusion."

SIGNIFICANT TRENDS

These whimsical reflections do not divert me from the discouraging observation that there are too many ifs and whens and hows and whys and wherefores as to both the present and the future to permit either logical or acceptable answers to the several obvious questions raised by the particular title which this conference has assigned to me. A multitude of uncertainties and variables of ever changing force must be dealt with. Most of all there must be a constant awareness of the gravest of risks; that is, the current tendency to oversimplify the solution of the difficult war problems of the realistic today and yet more difficult postwar problems of the indefinitely remote tomorrow. It is

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altogether too easy to reach conclusions compounded of hopes and speculations, seasoned with a mere sprinkling of facts, instead of following the trail of clear facts, trusting that these do not lead to a point too far from our chosen goals.

Within the prescribed limits of twenty minutes it is impossible to do more than to "spot" for each of the two phases of the trained personnel problem—the "medical" and the "other"—certain of the trends and facts of today that appear to have significance for the postwar period.

NEED FOR MEDICAL PERSONNEL

The first half of the subject matter suggested by the title directs us to the postwar needs for medical personnel. You will receive my forecasts as the products of the observations of a mere layman. While they may not run easily in the time worn ruts of the profession of medicine, they do represent serious meditation on matters of far reaching concern to the ways of life of a people who instinctively know that nature has written important sections of their charter of liberty. And nature demands that they have care for what nature has given.

It seems self evident that the postwar needs of medical personnel will be determined principally by:

1. The length of the war.
2. The number of the wounded and permanently disabled returned from the battle fronts.
3. The extent of the casualties of medical men serving with the armed forces.
4. The nature and amount of the accumulated effects of the reduction of medical service for the civilian population during the continuance of the war.
5. The available supply of the newly trained personnel coming from the medical schools during the period of the war and after.
6. The social philosophy adopted for the utilization of medical services in the interest of national health.

Under the most favorable circumstances as to the duration of the war, the number of casualties and the efforts to speed up the training of both men and women with the minimum qualifications for the practice of medicine, we shall find that there are too few doctors to serve our needs even when these needs are measured in terms of the pre-Pearl Harbor days rather than those represented by the demands for the hospitalization and rehabilitation of the wounded in battle and by such proposals for enlarged medical service to the American people as those announced last week by the National Resources Planning Board. The statement "It is essential that public provision be made for meeting the needs of our people for more adequate medical care. Toward this end the federal government should stimulate, assist or undertake constructive action to provide such care for the millions of our people whose need cannot be fully met from their own resources" . . . will provoke many a sharp controversy during the days ahead, within and without the profession of medicine. However, the issue may not be brushed aside by those having any part of the responsibility for the leadership of postwar medicine.

UNIVERSAL MILITARY TRAINING

Here I am tempted to digress and to call attention to one possible and entirely new factor that may have a tremendous influence on the amount and character of the postwar needs for medical service. Here, I fear, I am for the moment assuming the role of a protagonist.

If the nation is sensible in its foresight for the days after the war, adequate provision will be made for what has come to be called universal military training of our youth. In spite of the idealism with which we are mobilizing and energizing our powers for victory, this idealism must not lead us to any self delusion as to the necessity of guaranteeing the continuance of that victory by a quality and a quantity of trained military power that will not be found in any peace pact.

Each generation of American youth has a right to the opportunity to be prepared for its civic jobs. As human nature is, individually, racially, nationally, defensive war is likely to remain as one of the civic jobs for free men.

If and when we have such a plan for the continuous mobilization and training of American youth, it follows that new and greater drafts will be drawn on the profession and institutions of education of the nation. Thereby the standards of national health, national security and national unity will be established and realized.

EXPANSION OF TRAINING FACILITIES FOR MEDICAL PROFESSION

During the past six or eight months I have had opportunity to know the limitations of our medical resources. Already approximately one third of the medical manpower (dental, one fifth) has been absorbed by the armed forces. As the war continues there is a strong possibility that there will be available to the civilian population not to exceed one half of the peacetime medical services. The pressing question is what are we going to do about it?

It is my seasoned judgment, taking into account the estimated effects of war service on the available supply of medical personnel, the demands for medical service to those returning from the battle fronts, the new standards of medical care for the American people, that the time is already here when serious consideration should be given to plan for the expansion of the training facilities for the medical profession either through the enlargement of the capacity of existing institutions or by the creation of additional institutions.

One further item must be included in the inventory of postwar medical problems. This is the recruitment and development of young men and women possessing those rare qualities essential for medical research. Of the many disastrous permanent losses of the war, that of the diversion and thwarting of scientific abilities of the oncoming generation may not be discounted.

OTHER TRAINED PERSONNEL

The present assignment includes not only medical but also other trained personnel for postwar needs. Consequently I now deal briefly with certain other fields the effective occupation and cultivation of which require thorough and more or less prolonged technical preparation. Modern civilization, as we have come to know it in this generation and as we are able to foresee it for the coming generation, is more and more dependent on people possessed of hopes. But hopes are but thinly insubstantial unless resting on the firm base of health and highly trained skills with which to participate in productive work and to share in its rewards.

The war has transformed this country into a great training school. All over the land are to be found training centers for the Army, the Navy, the Air Force and the collateral services. The great war industries, acting independently or in cooperation with government agencies, have instituted programs for the teaching of unnumbered thousands of men and women their small specialized part of the business of making the machines

of war. As an illustration of this the work of the Engineering, Science, Management War Training Program of the Office of Education may be cited. In the past two years over 900,000 men and women have received training in the fields of engineering, physics, chemistry and production supervision. The report for November 1942 shows that 156,000 students were in these special war courses for that month.

The Army, the Navy, the Air Corps and other branches of the armed services are today in the first stages of one of the greatest of the educational undertakings of the war. Authorizations have been made whereby the armed forces are entering into contracts with nearly five hundred American colleges and universities wherein, during the coming year, some three hundred thousand men and women in uniform will receive training essential to fit them to perform the work needed by the armed forces. Including medicine and dentistry, the greater part of this training is of a technical nature. The impact of this enterprise on the professions of medicine and dentistry may not be disregarded.

TECHNOLOGICAL TRAINING

During recent decades we had to think ourselves as a people schooled in the ways of science and machinery. Only the inexorable demands of scientific mechanized warfare have convinced us how short we were of scientists and of workers skilled in the designing, making and servicing of the multitude of units of the machines of war. Since 1939 the nation has discovered beneath the peacetime surface of things its tremendous pool of human ability requiring but brief and intensive periods of training for high productive use in the small as well as the large war industries. The unprecedented accomplishments of these industries furnishes convincing testimony that to some degree we as a nation had reached that educational goal described three centuries ago by Milton "to perform skilfully and magnanimously all the duties of peace and of war."

Modern warfare is destruction raised to the *n*th power. This is a bit of triteness. Less trite perhaps to say that, from the point of view of discipline and the development of the productive skills of the nation, the war displays a constructive side. I am persuaded that unless it has a catastrophic duration the war will result in greatly increased attention to matters affecting the vitality and health of our people. Likewise we shall come to see that we cannot afford to neglect the task of training all for a place in the organization for an economic productivity that is technological in nature.

There are many amateur seers today divining the future by gazing into their own private crystal globes. Not a few of these are uttering dire forebodings as to the future of all our technical education as this is affected by the war. Their principal fear is centered in the effect of the streamlining of the established schemes of professional instruction designed to produce not merely trained minds but also educated men. Under the urgencies of the war all importance must be attached to the essentials of needed technical performance. Time is the relentless tyrant during the days of war. A resolution transmitted to me by the Board of Direction of the American Society of Civil Engineers is significant:

> That this board recommends to the governmental agencies concerned that provision be made for enrolling and retaining in college a sufficient number of engineering students of superior qualifications under such conditions as will permit them to complete substantially the time proved engineering curricula, to meet the war and postwar needs for recruitment of the engineering profession.

This crucial issue I am not permitted now to argue. I am optimistic enough to believe that all forms of higher professional and technical education are to gain something through their war experiences. The war is compelling us to do more and more with less and less in a shorter and ever shorter time. It is conceivable that in the postwar period we shall discover that under the compulsion of peace we can continue to do more and more with less and less for the greater and ever greater benefit of those who learn that the nation may live.

TRENDS IN SCIENTIFIC RESEARCH

A. R. DOCHEZ, M.D.
Professor of Medical and Surgical Research, Columbia University College of Physicians and Surgeons
NEW YORK

The responsibilities of medicine and the medical sciences in the conduct of warfare are ancient and well known. To many they consist of the measures taken to prevent disease and the proper care of sick and wounded. If, however, one contemplates for a moment the vast expansion of the technics of modern war and the necessity for their use in practically all known parts of the world, the almost indefinite extension of the function of the medical sciences quickly becomes apparent. The modern soldier must be adapted to his task by physical fitness, mental aptitude and endurance. In many instances the physiologic mechanisms of the body are not geared to the unusual stresses imposed. The number and variety of diseases to which he is exposed have greatly increased because of the geographic extension of the areas in which he must serve. Types of war wounds and other injuries are more varied and complicated as a result of the multiplication of the instrumentalities of warfare. In order to foresee and successfully solve the many problems which are arising, a well planned and integrated organization of medical science and practice has been developed.

THE NATIONAL ACADEMY OF SCIENCES

In 1863 Abraham Lincoln provided for the establishment of the National Academy of Sciences. One function of this body of scientific men has been to give advice to the government concerning problems of national importance. In the very beginning of its activities the National Academy of Sciences organized committees to consider and advise in questions of military and naval significance. In time of peace its various activities were continued and extended. In 1916, at the approach of war between the United States and Germany, President Wilson, foreseeing the need of a coordinated organization of the scientists of the United States, stimulated the creation of the National Research Council, a quasi governmental body under the general administration of the National Academy and made up of the leading scientists of the nation. During the period of the war the National Research Council was principally concerned with scientific problems related to the prosecution of the war. As with the National Academy, the peacetime value of such an organization quickly became apparent and its activities were extended to the survey and stimulation of research in all the sciences comprised within its field. The range of interest is broad, and numerous committees have been set up whose principal fields of activity lie within the

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mathematical, physical, chemical, mechanical, biologic and social sciences. Of more particular interest to us at the present moment is the Division of Medical Sciences. The immediate concern of this division is problems of medical interest, but close cooperation is maintained with all other branches of science.

THE DIVISION OF MEDICAL SCIENCES

At the outbreak of the present world war the Division of Medical Sciences, under the chairmanship of Dr. Lewis H. Weed, placed its services at the disposal of the government. Liaison was established with the Offices of the Surgeon Generals of the Army, Navy and Public Health Service and steps were taken to provide advice in matters of current medical practice and to develop research projects in those fields that were urgently in need of further elucidation.

At first the number of problems considered was relatively small, but as the immensity of the struggle became clear it was realized that extensive provision should be made to deal with all problems within the whole broad field of medical practice and research. The medical personnel of the entire country was carefully scanned by competent individuals, and groups were selected and organized into committees. These committees are made up of specialists in the many fields of medical science, are equipped to formulate the best medical practice of the day and have the scientific training and knowledge to discern important problems in need of further investigation and to organize the technical procedures necessary to their solution.

At present there function under the auspices of the National Research Council eleven main committees on the following medical subjects: General Medicine, Surgery, Neuropsychiatry, Aviation Medicine, Industrial Medicine, Sanitary Engineering, Shock and Transfusions, Treatment of Gas Casualties, Chemotherapeutic and Other Agents, Drugs and Medical Supplies, and Information. Under these main committees smaller subcommittees have been formed to consider such specific conditions as different types of infectious disease, cardiovascular disorders, problems of nutrition, surgical infections, burns, injuries to blood vessels, nerves and the skeletal system, shock, blood substitutes, psychiatric problems, war neuroses and venereal diseases; also such special problems in aviation medicine as oxygen and anoxia, sudden changes in the forces of gravity, decompression sickness, suitable types of clothing and the medical aspects of a variety of other important questions.

In 1941, while the National Research Council was in process of expanding its organization, the President of the United States established by presidential order the Office of Scientific Research and Development. Previous to this time there was already in existence and in action the National Defense Research Committee comprising a large group of scientists charged with the responsibility of making available scientific knowledge and personnel for the study and development of the instrumentalities of war. The new order added to this group a Committee on Medical Research and brought the two together under a single office. As at present organized, this office has for its director Dr. Vannevar Bush, president of the Carnegie Institution of Washington. It consists of two committees: the National Defense Research Committee under the chairmanship of Dr. James B. Conant, president of Harvard University, and the Committee on Medical Research, whose chairman is Dr. A. N. Richards, vice president of the University of Pennsylvania, in charge of medical affairs.

The duties of the Office of Scientific Research and Development are to advise the President with regard to the status of scientific and medical research relating to national defense and the measures necessary to assure continued and increasing progress in this field; to serve as the center for the mobilization of the scientific personnel and resources of the nation; to coordinate, aid and, when desirable, supplement the experimental and other scientific and medical research activities relating to national defense carried on by the Departments of War and Navy and other departments and agencies of the federal government; to develop broad and coordinated plans for the conduct of scientific research in the defense program; to review existing scientific research programs, and to advise with respect to the relationship of the proposed activities to the total research program; to initiate and support scientific research on the mechanisms and devices of warfare with the objective of creating, developing and improving instrumentalities, methods and materials required for national defense; to initiate and support scientific research on medical problems affecting the national defense; to initiate and support such scientific and medical research as may be requested by the government of any country whose defense the President deems vital to the defense of the United States and to serve as the central liaison office for the conduct of such scientific and medical research for such countries, and to perform such other duties relating to scientific and medical research and development as the President may from time to time assign or delegate to it. A sufficient budget is provided annually for the adequate carrying out of these purposes.

The Committee on Medical Research was charged, under the Presidential order, with the responsibility of making effective those parts of the order relating to medical affairs. Advantage was immediately taken of the existing organization and plans of the National Research Council, and the chairmen of the main committees were appointed consultants to the Committee on Medical Research. Existing medical projects were reviewed and plans were made for making the fullest use of the new opportunities for gathering knowledge and initiating research on problems related to the conduct of the war. At present the cooperation of scientific bodies, universities, medical schools, commercial biologic and chemical laboratories and many individuals has been enlisted for the exploration and investigation of the many medical questions arising from the war effort. Problems are formulated by the different committees of the National Research Council, extended and coordinated by the Committee on Medical Research, and the aid and suggestion of many individual scientists throughout the country is sought and encouraged. Contracts for the prosecution of the work are entered into with the government and funds are provided for the expenses of the investigation and, wherever necessary, for the salaries of the scientific workers engaged on the projects. Many scientists are giving a large proportion of their time without remuneration other than the satisfaction that comes from the study and solution of important and interesting medical problems. At present more than a thousand investigators are giving a part, or all, of their time to this work and more than three hundred projects have been set up for study.

SOME SPECIFIC PROBLEMS

This large group of medical scientists is well equipped in training, knowledge and experience to investigate and in many instances to solve the physiologic and

medical problems that have developed as a result of the multiplication of technics and situations of modern warfare. I have already indicated the wide range and variety of investigative problems that must be considered. It would no doubt be of great interest to present in detail the character of the questions to be answered and the progress that already has been made in the direction of their final solution. Unfortunately, sufficient time is not available to cover the entire field and the confidential nature of some of the problems makes public discussion of them inadvisable at the present time. I shall therefore present only briefly some of the more important work that has been undertaken.

All are familiar with the great stimulus that the universality of modern global warfare has given to the development and perfection of the airplane. Among the outstanding achievements of aviation engineers is the development of airplanes capable of attaining great altitudes and of flying at incredible speeds. On the other hand, man is not yet sufficiently adapted to meet the demands made on him by the mechanical genius of the engineer. Stresses are imposed that normal mechanisms cannot sustain. Methods, therefore, must be found to extend the range of adequate function of human physiologic systems.

At an altitude of 12 thousand feet, owing to low barometric pressure, man begins to suffer from an insufficient supply of oxygen and signs of deterioration of physical and mental capacity become manifest. At altitudes of from 25 to 30 thousand feet the oxygen pressure falls to such a low point that life itself becomes impossible. For man to function adequately at such altitudes, increasing amounts of oxygen must be artificially supplied. At 40 thousand feet even the breathing of 100 per cent oxygen fails to meet the needs of the situation. The modern airplane, however, is capable of reaching heights considerably in excess of this level.

Attacking forces in the air reach their goal with great rapidity. Interceptor planes in order to meet this situation must attain altitude in the shortest possible interval of time. Again the genius of the airplane engineer has been equal to the need. The pilot, however, is subjected to a rapid diminution of atmospheric pressure. If the change of pressure is great, decompression sickness, the familiar bends of the deep sea diver, may develop owing to the formation of nitrogen bubbles in the circulating blood. The symptoms vary all the way from local pain to occasional incapacitating paralyses and deterioration of mental activity.

The speed of the modern airplane is responsible for a variety of sudden changes in the equilibriums of the body. These changes are capable of causing great disturbances of function. When the body is rapidly accelerated it is acted on by a powerful force whose effects are manifested in the different tissues of the body, particularly the soft supporting tissues, the bony tissues, the organs suspended within the body cavity, and the body fluids. As an illustration, sudden change of direction of a fast moving plane, such as occurs in dive bombing, results in increased gravity effects which cause a shift of the position of the fluids within the body, especially the blood. If this shift is toward the trunk and extremities, the blood pressure in the head drops and cerebral anemia results accompanied by diminished visual acuity, the so-called "blackout," and in some instances even by complete unconsciousness.

There are many other problems arising from the needs of aviation medicine. Among the more important are motion sickness with its accompanying nausea and disturbance of the sense of static equilibrium, and fatigue resulting from observation and bombing flights of long duration. Practical questions of importance have arisen from the necessity of protecting aviators from cold and exposure encountered at extremely high altitudes where outside temperatures may be as low as — 50 F.

From this short review one sees that the physiologic capacity of man is stretched beyond its normal limits and must be supplemented in order to meet the strain of modern war in the air.

Much thought has been given to the provision of facilities for meeting these new and complicated situations, and men skilled in the various related fields have been assembled so that the best possible knowledge and ability may be devoted to their investigation. A number of decompression chambers have been constructed and are in operation. The purpose of these chambers is to simulate at ground level the varying conditions to which the aviator is exposed. High altitudes can be achieved in short periods of time and the physiologic effects of rapidly diminishing oxygen pressure can be observed. By means of refrigeration extremely low temperatures are developed. Thus all the conditions that surround the flier can be exactly imitated and functional inadequacies precisely measured. Investigative groups assigned to work with these chambers consist of physiologists, chemists, physicists, physicians and engineers. Provision is thus made for the adequate study of the functional changes that result from oxygen want, rapid decompression, exposure to extremely low temperatures and all other aspects of altitude tolerance. The final purpose of these studies is the discovery of reliable means of supplementing deficiencies and counteracting untoward effects. In like manner mechanical devices have been arranged and personnel provided for the study and remedy of physical disabilities induced by sudden increases in gravity effects, by motion sickness and by prolonged exposure to low temperatures and fatigue.

Perhaps the most immediate danger to which the soldier is exposed is that of being injured in battle. The common types of injury are wounds, contusions, fractures and burns. Such injuries may involve any part of the body and may be single or multiple in character. Body cavities may be penetrated by bullets, shell and bomb fragments, destructive injuries to the central nervous system and peripheral nerves are not uncommon, and important blood vessels may be severed with the resulting danger of gangrene of the affected part. Burns of severe character are important features of modern mechanical warfare. Injuries of all these types are not uncommon occurrences in civilian life, and surgeons are continuously working on the perfection of methods for their care. In time of war, however, such injuries acquire especial importance and an unusual effort must be made to develop suitable and improved methods of treatment. Special studies have been inaugurated in each of the surgical fields mentioned.

In past wars uncontrollable bacterial infection of wounds has always been the principal cause of death. In recent years chemical and biologic agents have been brought to a high degree of usefulness in the control of such infection. The occurrence of tetanus has been diminished almost to the point of disappearance by prophylactic immunization of troops against this disease.

In order to study infection of wounds, special units have been set up in a number of large hospitals of the

country. Their purpose is to test the best methods of using the sulfonamide drugs and other chemotherapeutic agents. Ordinary civilian casualties are used in this investigation. These units are staffed by a variety of specialists, and careful bacteriologic records are kept for the purpose of noting the presence or absence of infection during the course of treatment. The rate of healing and the general progress of the injury toward recovery, the amount and character of the drug used and the method of application are all carefully recorded. Frequent discussions are held between the many workers engaged in this study, methods are compared and results are evaluated and, as new and promising procedures are developed, critical trials are arranged to test their efficacy. At this point I may say that through the medium of the National Research Council continuous liaison with the armed forces is maintained so that new and useful methods quickly become available for field application.

Because of the unique characteristics of the mechanical warfare of today, burns have assumed a position of far greater importance than in previous wars. Just as units for the study of surgical infections have been set up, so at a number of places special groups for the intensive study of the treatment of burns have been organized. Burns occurring in civilian life are congregated at designated hospitals. Specially trained men compare the most modern methods of treatment and assess their value. Through the medium of frequent meetings comparison of results takes place, and as new technics become perfected thorough testing is provided.

As an illustration of the rapid progress in chemotherapy it is interesting to describe in some detail the most recent development. In 1929 Dr. Alexander Fleming, an English bacteriologist, discovered that a certain mold, Penicillium notatum, when cultivated in a suitable growth medium manufactures a substance which checks the multiplication of gram positive bacteria—the usual causes of suppurative processes and of septicemia or blood poisoning. This discovery was at first largely of technical interest. Within the last three years, however, its use has been extended with success to the treatment of human infections. At first only small and inadequate amounts of the material could be prepared. Intensive study of the processes of cultivation of this mold by scientists in governmental, university and commercial laboratories is resulting in the production of increasing amounts, so that the scope of its use in human disease is being rapidly extended. This substance is many times more active than the sulfonamide drugs and is useful against the same types of bacteria. It has the additional advantage of being effective against certain organisms such as the staphylococcus, a frequent cause of septic infection, a field in which the sulfonamides have proved to date to be of very limited value. There are indications that it may be of value even in gas gangrene, one of the most dangerous and resistant to treatment of infections encountered in the first world war. While still in the experimental stage, it is hoped that with improvement in methods of production this new and most effective substance may before long become widely available.

Before soldiers wounded on the field of battle can receive effective treatment, varying periods of time are likely to elapse owing to transportation difficulties. To meet this situation, treatment units are established as near to the lines of battle as practicable. Nevertheless time is lost as the result of the numbers of casualties and the difficulties associated with collecting the wounded. In certain instances the wounds themselves are initially of very severe character. During this total period and for these and other reasons a serious condition of shock may develop. This is one of the major medical problems of warfare. In order to study methods of preventing and combating this serious condition, numerous investigations requiring the time of a large number of specially trained medical men have been organized. Important facts are being brought to light and improved therapeutic procedures are being developed. One of the newer and most valuable of these is the use of blood and blood substitutes. In recent years blood banks have been successfully organized in many civilian hospitals so that whole blood will be immediately available in case of emergency. As a substitute for whole blood, blood plasma has been found to be extremely satisfactory. With the cooperation of the American Red Cross, blood collecting centers have been set up throughout the United States. The blood after collection is processed and the plasma separated off. The plasma is then dried in sterile containers and packaged in convenient form with the necessary amount of diluent. The plasma can be reconstituted and made ready for use with a minimum amount of effort and delay. Because of its dry condition it withstands extreme variations in physical environment without loss of therapeutic value. Abundant reports from the front already indicate the life saving value of this material in controlling the dangerous effects of shock and hemorrhage. An extensive search for other blood substitutes is being actively carried on and certain ones of promise are already receiving preliminary trials.

As a by-product of the search for blood substitutes for the first time, many purified components of human blood are being prepared. The potential usefulness of these materials is only beginning to be explored. That it may be great seems likely, since blood carries most of the essential substances necessary to life. I may mention that a purified globulin has already been obtained which is capable of protecting exposed individuals against certain types of infectious disease.

Although the ancient plagues of armies are today much less prevalent and better knowledge exists for their effective control, nonetheless in the prospective likelihood of increasing social disorganization and demoralization their potential dangers cannot be overlooked. A number of investigations are therefore being fostered with a view to improving the methods of control and treatment of the most important infectious diseases. Special attention is being given to influenza and pneumonia. The nature of the infecting agents and their method of spread are being studied and several experimental investigations are under way whose purpose is, if possible, to provide a practical method of preventive inoculation. Intensive studies of typhus fever are being carried out and progress is being made in methods for controlling the insect vectors of this disease and in the development of a protective vaccine. Modern and recently developed technics are being utilized for the improvement of protective inoculation against dysentery, cholera and bubonic plague, and the usefulness of the sulfonamide drugs in the treatment of these diseases is being explored. The epidemiology and control of streptococcic infection, one of the most important causes of death during the last war, is being studied both in the laboratory and in the field by a large group of experienced investigators.

In the realm of infectious diseases a unique organization has, with great foresight, been set up under the leadership of Col. James S. Simmons of the Office of the Surgeon General of the Army and of Dr. Francis G. Blake of Yale University. The particular responsibility of this group is the survey and care of the health of soldiers in the many military installations in this country. A number of commissions of specialists have been organized and funds provide for the expenses of their work. These commissions carry on investigations in different medical laboratories throughout the country, and a certain number are always prepared at short notice to go into the field. In fact a certain number are continuously working on special problems in camps in different parts of the United States. The range of activity is very broad and includes investigation of such diseases as influenza, pneumonia, measles, scarlet fever, rheumatic fever and other streptococcic infections, meningitis, virus diseases of the central nervous system and tropical conditions. Special attention is being given to the development of methods for disinfecting the air of barracks and hospital wards in order to limit the spread of infectious processes within these areas. The health of the armed forces has been unusually good during the period of mobilization and training. This is particularly fortunate, since epidemics arising in military establishments not infrequently spread to the civilian population.

INTERRELATION OF WAR AND POSTWAR PROBLEMS

Although my presentation has been fairly long, I have covered but briefly only a portion of the many medical activities that are in progress as part of the war effort. The emergency has greatly sharpened our vision and has liberated large stores of energy and enthusiasm. These forces fortunately have both the direction and the means necessary to realizing their objectives. Scientific bodies, universities and governmental agencies are utilizing the opportunities to the fullest possible extent. Both immediately practical and fundamentally significant knowledge is being gained. Though I have made no specific mention of postwar medical problems, it must be obvious to all that medical questions arising from war are closely interrelated with those of postwar periods and that knowledge gained and applied in wartime is equally useful in times of peace.

DISCUSSION

DR. FRANCIS G. BLAKE, New Haven, Conn.: Trends in scientific research, like trends in most of the activities of men, are greatly influenced by the social, political and economic setting in which such activities are carried on. This could be no better illustrated than is illustrated by the impact of the social setting of war on scientific research. While it may be true that the impact of war on scientific research has only accelerated a trend that had already begun to appear, it certainly has had ever greater influence on that trend. That trend is a trend toward cooperative investigation in research. This has become all the more necessary because of the increasing complexity of technics, the necessity for the application of the technics of physics and mathematics and chemistry and many of the fundamental sciences to the problems of medical research. Not only has it accelerated the trend toward cooperative research by teams of investigators, but, under the necessity of making the results of scientific investigations of immediate importance to the war effort available as rapidly as possible, it has resulted in a much more free and extensive exchange of the results of current research among those investigators who are carrying on work in a particular field, such as aviation medicine or infectious diseases or blood substitutes.

Directed research by committee organization may have some drawbacks—no one, of course, would deny that. Under the impact of the war, however, this type of research cannot be deplored, certainly, because there are immediate practical problems for which the armed forces must have prompt solutions. In fact, their demands for prompt solutions are often so urgent that they wish a solution or an answer before the scientific research is able to give a scientific answer. This type of research in the present setting of society, a competitive, internationally competitive, society is by no means to be deplored. It has other beneficial effects, I am sure, in perhaps bringing some investigators out of their pleasant and quiet ivory towers and making them really think whether the problems they were working on before were of true significance or only providing them with an opportunity not to meet and answer the real questions of life. Yet there is a danger in too much organized committee research, not for the immediate social setting of wartime but for the postwar period. That danger, I think, is perhaps not a serious one, but it is certainly true, or at least I would feel that it is true, that too much group and organized research may tend to delay the development of individual initiative and curiosity in investigation—the desire of the individual to answer a question by investigation, which he is unhappy about until he has answered it.

What the present trends in research will be in the postwar period, no one, I believe, can predict. It will depend, as I tried to indicate at the outset, on what the philosophy of society is in the postwar period, whether it is to be a completely organized and directed society or whether it will again become a society in which at least a reasonable amount of individual initiative may be exercised to answer the questions which intrigue those who are engaged in scientific research.

DR. LEWIS H. WEED, Baltimore: Medicine has a unique opportunity here to go ahead in a surprisingly accelerated fashion to meet the practical problems which military medicine presents, for there are problems in military medicine which civil medicine does not meet. Certainly, if one contemplates merely the field of aviation physiology, one realizes that while, during the last war, there was tremendous activity in the research laboratories relating to the problems presented by the airplane, that research, as far as the human element is concerned, practically became nil during the intermediate period. It has required enormous stimulation in order to get the necessary research programs under way. Military medicine will carry on in the postwar period because of the tremendous necessities that postwar Europe and the postwar world are going to present in the problems of infectious diseases, the problems of nutrition, the problems of migration of peoples. We have an opportunity during this period to create a new type of military medicine. I am very happy that the Navy has gone ahead and built its own research laboratory which will be devoted to the problems of navy medicine, not only during the period of the war, but as a continuing activity, bringing in civilian scientists and naval officers into this general program. A similar project is, I believe, under way in the Army. I hope that we shall in the next war have a body of fact which has come out of the researches, both in the Army and in the Navy Medical Corps, which will enable them to carry on in these problems of military medicine.

DR. A. N. RICHARDS, Philadelphia: I am grateful for the privilege of being given this opportunity because there is one thing, it has occurred to me, needed saying. Allusion has been made to it, but it could be amplified a little bit. A trend has been occurring to my knowledge and in my experience for twelve years at least, perhaps fourteen, which has resulted in a closer cooperation between university research institutions and commercial research institutions. The present emergency has intensified that cooperative effort, and it seems to me that it is of the greatest importance. Among the commercial organizations, particularly those that are represented in the list that you see on your program, there are abilities and funds which medicine of ten years ago or twenty years ago was not realizing, which they did not altogether trust. I think that trust is being established on the basis of a tremendously admirable spirit in those industries.

HEALTH—A WORLD PROBLEM

F. P. KEPPEL, LL.D.
NEW YORK

Program committees are arbitrary people, and I find myself put down for a topic I am not equipped to discuss. Please remember, while I tell you what I can, that the choice both of topic and of speaker was not mine. For many years I have stood on the side lines of medicine and public health, first as a university officer at Columbia; then in '17-'19 in our War Department, where I saw much of General Gorgas and the doctors he gathered round him, from Popsy Welch down; then for two years with the Red Cross, where I had the privilege of seeing something of its great work in Europe in '20 and '21. And then I was for nineteen years an executive of the Carnegie Corporation. In medicine and public health we were quite content to play second fiddle to the Rockefeller Foundation, but we did some things of our own. I hadn't realized how much until I saw an analysis of the Carnegie Corporation grants made by my successor and found that since its establishment $12,000,000 has been spent for these purposes.

What I remember best was not the big grants but some of the smaller ones—the eight thousand dollars which had much to do with the discovery of insulin. Since then insulin has cost us twenty or thirty times as much for its purification. We gave Hopkins some money for general endocrine studies to be directed by Dr. Abel, who had retired from his professorship and was no longer a youngster. In the middle of the studies Dr. Abel's leg was broken in a street accident and he thereupon gave a demonstration of that devotion to responsibility which is one of the glories of your profession. When the leg was set and mummified in a cast, did he go home? No, he had himself moved into his laboratory, and the research went on without a hitch. Later on Lewis Weed, with very moderate financial help from the corporation, has done a great job to stimulate the spirit of research in dental education.

One particular part of our work touches world health conditions more directly. Mr. Carnegie set up a special endowment for the British dominions and colonies, and that brought us into contact not only with Canada but with Australia and New Zealand, with the Union of South Africa and with the colonies in tropical Africa and elsewhere. A good part of our money went into fellowships and travel grants. The men and women selected not by us but by local boards could go where they pleased, but we had a wonderful demonstration of the degree to which those lands turn to us for help in medical and health leadership—it's not for the record, but definitely more than they do to England. Believe it or not, they have a higher opinion of American education than we seem to have ourselves, and most of these grants were given to teachers to come to the United States, but grants for medicine and public health were a good second.

And now I'm on the side lines in Washington. One of my two jobs there is as a member of the War Relief Control Board with Ambassador Davies and Charles P. Taft. Among other things we are doing what we can to help the American people to realize that government aid through Lend Lease and otherwise is not enough, no matter how generous it may be. The good will offerings of individual Americans carry a message of love and understanding which must be measured not in terms of dollars and cents but in terms of spiritual therapy for the giver and for the recipient. And of course anything that reaches the individual in the suffering land—clothing, food, drugs and medical supplies—has its practical therapeutic value as well. The opportunities are now limited, but, as new territory is opened up by military victory, the opportunities will increase and so I am sure will the gifts from our people.

I have another job in Washington, as a member of a two man board of appeals set up by the President to pass on applications for immigration visas, and in these days that is chiefly a question of the admission of refugees. Let me say at the outset that this is a question about which the American people are both ignorant and misinformed. There seems to be a widespread impression that great hordes of unwashed and ignorant foreigners are beating at our doors. The facts are that, if every single application received in the year 1942 had been approved and if every single holder of a visa had been able to get here, the total would have been less than 10 per cent of the immigrations under the quota system in a normal prewar year. But less than half the applications are actually approved, and a high proportion—I should say fully one half—of those who were granted visas have not been able to use them. You all know what happened when our consulates in southern France were closed last fall.

Let me tell you also that the proportion of these applicants who have had university training and professional or scholarly or creative experience is very high. I haven't the exact figures, but I believe they compare favorably with the proportion in the United States today. The anthropologists have stolen the word culture from the rest of us, but I am using it in the old fashioned way when I say these are largely people of culture. If you see pretentious and vulgar men and women who have bribed their way across Europe and across the Atlantic, and we all do see such people, remember that they are very much the exception and not the rule.

Now as to the relation of all this to world health. It has been my duty to go over more than twelve thousand of the dossiers of these applicants, and it surely is an extraordinary series of human documents. They show all too clearly the physical effects of persecution and hardship. In case after case where a husband and wife had applied together, the application had to be changed because one or the other had died in a concentration camp before the case could come up for consideration.

And let me tell you something else. We made a statistical study of the applications from Europe and we found that more than 40 per cent of these people had already moved from one sovereignty to another before the days of armed invasion or organized persecution. In many instances they had moved three and even four times before their applications were filed. The modern wandering of the tribes had started years ago.

For such people the question of physical health is bound to be tied up closely with that of mental health. I am sure you all feel this, but perhaps I can confirm your feelings. Over and above the strain which each one of us is under in wartime, these people have suf-

Read before the National Conference on Planning for War and Postwar Medical Services, New York, March 15, 1943.

fered humiliation and insult and physical brutality. Their families have been torn asunder, they live not only in hardship but in uncertainty from day to day. Until they reach a haven of refuge they can make no plans for the future.

And now a final word on a somewhat embarrassing topic. As I said, a large proportion of the applicants are professional people. Among them are many members of the health professions—doctors, dentists, nurses, research workers. How can we use these people to the best advantage of the United States? In all these callings we have today both a numerical shortage and a serious maldistribution. In all these callings American men and women have left their jobs and the path of professional advancement in their communities to serve their country and have done it without an instant's hesitation. We all share in the responsibility to protect those jobs for them to return to. Can we have it both ways? Can we use these immigrants, many of them highly trained, and still protect our own fellow citizens? It's not an easy question. May I in closing offer a suggestion which is wholly personal and unofficial? I'll put it in the form of still another question.

Might it be possible for the Manpower Commission, as a temporary war measure, to ask for the granting of special licenses to immigrant aliens, the right to practice being restricted in each case to some community designated by the commission—some mushroom industrial center in the South, let us say—and the license to be good for the duration of the present emergency only? Think it over—and thank you all for having listened so patiently to my wandering remarks.

522 Fifth Avenue.

WORK OF THE RED CROSS IN POSTWAR MEDICAL REHABILITATION

RICHARD F. ALLEN
Vice Chairman, American Red Cross
WASHINGTON, D. C.

For a person who has spent some three and a half years out of the last four years abroad, usually in the midst of problems created by this war, attempting to bring some relief to the millions in distress, it is a great comfort to me to be here and to see this group of men and women who are giving serious consideration to postwar problems.

In every place I have been, I have seen groups of people meeting to discuss this problem. In most of the places I have been, they could not discuss the problem at banquets because of food regulations and sometimes because it was not safe for large groups of people to be together in one room. In London I had the great pleasure of participating in the discussion some eighteen months ago at the Royal Institute of Science, in a meeting where they discussed postwar problems. At that meeting were representatives of practically all the governments that are now making their headquarters in London because their countries are occupied by the enemy. Also represented at that meeting were the best brains and talent in Great Britain.

In France the discussions were rather on the quiet side. There wasn't much discussion of postwar problems before the fall of Paris, and after the fall of Paris, of course, no groups of people could get together and discuss freely the problems. But in the relations which I had over a period of many months with the leading health authorities and scientists in France I never met with them privately or in small groups that they did not discuss what we were going to do in postwar relief.

I was in Iceland and I was rather surprised—I don't know why I should have been—to hear the doctors and the scientists there discussing the same thing. And now I have just returned from North Africa, and one of the questions that always arose was what America was going to do about postwar relief. It is pitiful how they depend on us to do something about it. It will be a tragedy if we let them down. That is the reason why it is a great comfort to me to see this group of men here tonight considering some of these postwar problems.

I wish I could tell you what the American Red Cross is going to do in medical rehabilitation following this war. I don't know, and I don't believe anybody else knows at the present moment. I do know that we shall do something. Just what that something will be it is hard to say. But when postwar relief gets under way there is no question in my mind that the American Red Cross will be taking a very prominent part in the giving of medical relief and in medical rehabilitation throughout the world.

The reason why I am so sure this is going to happen is that we have had more experience in giving relief throughout the world today than any other organization in the world. I will go back a little bit. I hope I won't bore you with getting into history. I will make it brief. I will go back and sketch rather hastily what was done immediately after the last war.

The American Red Cross rendered very unusual services to the Sanitary Corps of the United States Army during the last war. We had great quantities of medical and hospital supplies in warehouses both in France and in America. The Army at the end of the war also had huge reserves. In the spring of 1919 the Army gave $25,000,000 worth of those medical supplies to the American Red Cross to be distributed throughout the countries of Europe which were being rehabilitated. Unfortunately, neither the American Red Cross nor any other agency had worked out a long-time plan. I think the emergency job we did was an excellent one. I think that a good many things which we started with the idea that they would be permanent fell short of the mark, although there are indications as you travel through Europe that many of the dispensaries, nurses' schools and hospitals which we established are still operating and are taking the leadership in those countries.

We distributed huge quantities of medical and hospital supplies in Poland, the Baltic states, Czechoslovakia, Austria and Hungary, Rumania, Bulgaria, Montenegro, Greece, Albania, northern France and Belgium. I hope I haven't forgotten some of the countries in which we operated. We restored hospitals. A good many of the hospitals had been damaged by enemy action. All the hospitals were depleted of the stocks which they needed to care for the civilian population. We worked with new and inexperienced health departments in new countries. We weren't particularly well equipped to do that job. I think we probably made quite a few mistakes in it, but the sum total is an excellent one.

Between the two wars what happened? We had formed many friendships and acquaintances throughout

Extemporaneous speech made before the National Conference on Planning for War and Postwar Medical Services, New York, March 15, 1943.

Europe in those days. Then we left Europe. We were an emergency organization. We came home. The reason why I mention that fact—of which we are not particularly proud—is to impress on you how important it is that any agency which does health work in Europe following this war does not go to stay only a short time, or, if some agency does go to stay only a short time, it should be a part of a big plan which would provide for a proper follow-up. I need not stand before this group and tell you that you can't do really constructive medical rehabilitation in a short time. It is a long-time problem, requiring great patience, and it requires a lot more patience outside the United States than it does inside the United States.

The Rockefeller Foundation and some British organizations, perhaps some other American organizations, carried through, and through their work the health departments throughout Europe are in a considerably different position than they were following the last war. Most of the countries in Europe today—and I am talking about Europe mostly, although the point is good for the rest of the world too—have fairly good health departments. They have fairly good staffs of doctors and they have some staffs of nurses, and any agency or agencies that go into Europe doing medical rehabilitation will make a great mistake if they do not lead the local people to take the leadership in giving that relief. It would be a great mistake if the United Nations or the United States or Great Britain or any other country should go in and impose a plan on these countries. They must work out their own problems with our help.

Since the current war has been under way, what has been going on? The American Red Cross has sent huge quantities of medicines and hospital supplies to Great Britain. We have sent huge quantities of supplies to Russia, China, India, the Middle East, to France before the fall, and then lesser quantities to Belgium, Norway, Yugoslavia and Greece. How have those supplies been distributed in those countries? In all cases they have been distributed in close cooperation with the established health authorities in the country and with the cooperation of both the public and private authorities on health.

I will tell you one experience which I think will illustrate my point: When the Germans came into northern France they took over practically all the hospitals in the nine departments north of Paris. The civilian population came back from the south where they had fled, and there were no hospitals in northern France. Neither were there any available supplies, because the Germans had taken the supplies too. Fortunately, just before the fall of France a ship had left America loaded with two million dollars' worth of medical and hospital supplies. These supplies had been gotten together with the idea that they would be used behind the lines of the French and British armies, both for the armies and for the civilian population. But before the time the supplies could be gotten to France the story was all over and the Germans were in command. There was no French army in the field.

After great difficulty, we shipped most of those supplies up to the north. There was no great need for medical and hospital supplies in the south of France. We had a terrible time working out a plan with the Germans for the distribution of those supplies. Everything we did had to be approved by them. The head of the health department of France, the Rockefeller Foundation representatives who were there, the French Red Cross and several French agencies conferred with us on how those supplies could best be used, and we finally decided that they should be distributed in these nine departments north of Paris.

We made a hasty survey and found that the hospitals were in old museums, in hôpitals de charité, and in buildings which were certainly never designed to be hospitals. They had no sanitation, they had no heat and they had no equipment except for the very ordinary, common things that they could buy on the local market.

We finally got the Germans to agree that they would not disturb any of these supplies. We were rather shy in trusting them. I think you will understand that. They finally did agree, however, and Berlin itself sent out word to the commanding officers in each section that the supplies were not to be touched by the Germans.

We shipped into that district north of Paris great quantities of gauze, ether and cotton, surgical instruments, drugs and medicines, and all those things were used in the simple little emergency hospitals that were set up in order that the French population might be cared for. We did that with the full support of all the French doctors and nurses and social workers in the north of France. It was a great success. It was quickly done, and it saved untold distress.

In this matter of postwar relief it seems to me that the most important thing is an understanding of the people whom you are going to serve—making the point, again, that we help them to help themselves. Language is a great difficulty, of course, and there are not a great many doctors and nurses in the United States who have language accomplishment. Language accomplishment is not the most important qualification, however. The most important qualification is the ability to convince the people for whom we are caring that we are trying to help them to help themselves.

Over in North Africa recently, when the President arrived, everybody was excited. One afternoon, when it was known that the President was there, or about twenty-four hours after he arrived, one prominent Frenchman said to me "Mr. Allen, is it true that your President speaks perfect Arabic?"

I said "I don't know. Our President is a very remarkable man, but I doubt very much if he speaks perfect Arabic."

This Frenchman said "Well, all the reports that come to me say that he is carrying on conversations in Arabic with the Arabs."

"Well," I said, "if you knew our President as well as we do, you would know that he could know about three words of Arabic, smile and wave his hands, and they would be convinced that he was wanting to help them."

That is what I mean about doing this postwar job. Let us not just be coldly efficient. Let's do the thing and have a heart in it too, because if we don't we are going to fail in one of the biggest opportunities any people in any land ever had. I believe thoroughly that the American Red Cross is qualified to play an important part in the medical rehabilitation of the world. We have had the experience, we have the acquaintanceship and we have a prestige which is beyond question.

INTER-AMERICAN COOPERATION

NELSON A. ROCKEFELLER
Coordinator of Inter-American Affairs
WASHINGTON, D. C.

It is a privilege to have the opportunity to meet with you, the nation's leaders in public health and medicine, at this National Conference on Planning for War and Postwar Medical Services. The memory of Dr. Carlos Finlay and his great contribution to mankind is an ever present inspiration in carrying forward those services which have made possible the tremendous advance of civilization during the past century.

Medicine, whether in war or in peace, knows no boundaries. It is universal in its concept, humanitarian in its philosophy, giving aid and assistance to the weak and oppressed in all lands. While a war torn world is bent on destroying lives, it seeks to preserve and build.

The Axis has plunged the world into total war—a new form of warfare in which the military, the most spectacular phase of total war, deals only the last of a series of destructive blows. The Axis prepared for this final phase by cunningly conceived plans for the domination and corruption of political life, the destruction and control of economic life and the demoralization of the will and morale of the people. The Axis plan envisioned total destruction and the enslavement of the world, but it underestimated the vitality and determination of the freedom loving peoples of the world. In this hemisphere, in Europe and in the Far East these peoples have rallied from the blows of the last few years and are now gaining the offensive on all fronts.

In this total war the republics of the Western hemisphere have drawn closer together and greatly strengthened their machinery of cooperation. Jointly the American republics worked out a plan of action at the Rio de Janeiro conference in January 1942 on the basis of which we have mobilized manpower and material resources to meet the Axis on all fronts of this total war. Swift, positive action was initiated to stamp out Axis subversive and propaganda activities, to prevent Axis sabotage and economic domination within the hemisphere. Defensive and offensive military strategy of the hemisphere, including the development of a network of air and naval bases, has been developed under the guidance of the Inter-American Defense Board, which is made up of the leading military strategists of the twenty-one American republics.

But the power of a nation is no greater than the strength of its people, whether on the fighting front, on the farm, in the factory or in the home. The ministers of foreign affairs at Rio foresaw this and realized that the success of this total effort would depend on the physical strength and moral fortitude of their people on the hemisphere home front. Therefore a resolution was passed recommending that the American republics take appropriate steps "to deal with problems of public health and sanitation, by providing, in accordance with ability, raw materials, services and funds."

Read before the National Conference on Planning for War and Postwar Medical Services, New York, March 15, 1943.

This joint determination exemplifies the inter-American way of life—the way of friendship and cooperation. It is in stark contrast to the Axis way of life—the way of domination and death.

Thus the program of health and security formulated at Rio was designed to meet Axis total aggression on three main fronts—the military front, the production front and the home front.

First, on the military front the ministers recognized the possibility of the danger throughout the hemisphere of a situation which was so tragically described by last reports from Bataan. They indicated that the troops were unable to carry on because 90 per cent were ill with malaria and dysentery and that all forces were weak from lack of food. Control of malaria and the development of adequate food supplies in strategic areas throughout the hemisphere were critical factors in military strategy.

Secondly, the same program was essential for the development and production of critical materials, such as rubber, hemp, manganese, tin and hundreds of other raw materials essential to the operation of war plants of the United States. Sickness and hunger lay in the unexplored jungles where the great riches of rubber and other tropical production went virtually untapped. Strong and healthy men, with their families, dared not face the ravages of disease and lack of food. Therefore the flow of raw materials was dependent on the work of public health doctors, sanitary engineers and agriculturists in such areas as the Amazon Valley extending for over 3,000 miles through the heart of the southern continent.

Thirdly, the morale of the people and the political stability of the other American republics was threatened by increasing wartime economic dislocations. Normally our neighboring republics depended largely on exports of coffee, cocoa, sugar, bananas, grains. Coffee was accumulating in the warehouses of Brazil, bananas were rotting on Central American plantations, Cuba was having to reduce her sugar grind, all because shipping was increasingly being used to do the primary job of moving men and supplies to the fighting fronts overseas. Rail and motor transportation suffered from lack of fuel, repair parts and tires.

Unemployment was rising as factories closed for lack of materials or because of the curtailment of activities on banana and coffee plantations. The problem was aggravated by the increasing scarcity of goods and rising prices. These conditions in turn threatened social consequences. They were leading to malnutrition, ill health, social unrest and weakening morale. The governments of the other Americas derive substantial parts of their revenues from export and import duties. Thus the shrinkage of foreign trade reduced the capacities of these governments to provide necessary help to their people when it was needed most.

Here, in short, was a stern test of the good neighbor policy. The ministers at Rio realized that the type of bold decisive action necessary to meet these problems would be possible only through joint action. They realized that the hardships and sufferings on the home front could play into the hands of the Axis agents,

skilled in the art of spreading fear, mistrust and confusion in the hearts and minds of people.

Therefore immediately after the conference, in accordance with the resolutions passed, the Office of the Coordinator of Inter-American Affairs, acting on behalf of this government, launched a program in cooperation with the governments of the other republics. This program is summed up in the term basic economy, and the work is being carried out in the fields of health, sanitation, food supply and nutrition. Let me tell you in some detail of this work, because it may be of interest in connection with the problems you are discussing tonight. It illustrates graphically how the Americas are jointly facing and meeting the grave problems of the war.

To carry out this program in accordance with the Rio recommendations, notes of agreement have been exchanged between the United States and fifteen of the other American republics, calling for joint undertakings in the field of health, sanitation, nutrition and food supply. In each case, after the exchange of notes, cooperative programs were mapped out by representatives of the Institute of Inter-American Affairs, an agency of the Office of the Coordinator, and officials of the respective countries. The actual execution of the work is carried out by a "servicio cooperativo" which is established in each country under the minister of public health or agriculture, depending on the nature of the program.

At the present time over a thousand projects and activities are being carried on in these fifteen countries. Of these, about two hundred involve buildings constructed of local materials, including hospitals, health centers and nursing schools. Another two hundred are sanitary engineering projects, such as drainage for malaria control, improvement of sewerage and water supply. Many hundreds more are for the expansion of agricultural production in deficient areas—they include irrigation and storage facilities as well as general crop and livestock development.

Mobility of medical service is a prime requirement over the vast areas where strategic materials and defense bases are being developed. Consequently the inter-American health and sanitation program is producing unique facilities. For example, on the Amazon and its tributaries a fleet of more than thirty boats has been assembled and transformed into floating dispensaries. The majority of these are small launches which carry four beds and are staffed by one doctor and two nurses. They service the rubber worker on the remote tributaries of the Amazon. Likewise, along the inter-American highway in Central America, motor trucks have been equipped as mobile dispensaries.

As you know, there is a shortage of material and trained personnel, but fortunately most of the technicians and other trained personnel for these programs are being provided by the other Americas. The ratio of doctors and engineers is about one from the United States to every twenty-five from the other Americas. The other Americas likewise are contributing substantially in the way of funds, materials and equipment.

The projects provide sanitation for areas around defense bases, they provide health services for millions of workers on the production fronts of the Amazon and Central America, in the mining regions of the Andes and Brazil, on fiber growing projects in Haiti.

While malaria control is of primary importance, the work also aims to reduce the human toll taken by such diseases as tuberculosis, plague, typhus, dysentery and yaws.

The campaign against disease must be a rounded program. Disease germs are not isolationists. They move about more freely now with the development of highways and airports. For example, the death dealing gambia mosquito which ravaged northern Brazil was brought to this hemisphere by airplane from Africa. Inter-American transport by highway and air will be greatly accelerated after the war and will increase the need for our cooperation in the war on disease.

The battle against malaria is being fought under the most difficult conditions. In some places work is being done along thousands of miles of riverfronts. In others, supplies have to be carried over the Andes by airplane, motor truck, canoe, pack mule and even on the backs of men to medical outposts. To get construction materials, it has been necessary in some places to erect brick kilns and saw mills. In Guayaquil the ingenuity of doctors and engineers produced one hundred beds for the hospital out of twisted wire and old pipes.

Doctors and sanitation engineers of the Americas toil through jungles, navigate swift mountain streams on balsa rafts and live for weeks and months in forests far from the comforts of home. The war they are waging against disease is essential to victory and a vital part of the total war effort.

Disease and hunger are twins, born of the same conditions. They are twin problems in the vast Amazon country as in other places where development of strategic materials is under way. Brazil is moving fifty thousand additional workers for rubber production into the Amazon. The new workers must be fed as well as protected against disease.

Ordinarily, with adequate shipping, food had been brought in from surplus areas. Now with the shipping shortage it is essential to grow more food locally. Brazil and the United States undertook a joint program and are contributing equally to a $4,000,000 project for expansion of food production through the whole of northern Brazil. Food growing projects likewise have been arranged in Costa Rica, Panama, El Salvador, Honduras and Paraguay. Others are in prospect. These are designed to encourage the growing of vegetables, fruits and dairy products for local consumption and to supply the military in defense areas. The Panama Canal forces are receiving increasing quantities of food from nearby countries, thus saving valuable shipping space.

In Honduras, employment has been provided for two thousand former banana workers on a transcontinental road to help tide a banana growing area over the sudden loss of its economic mainstay when banana exports to the United States were curtailed drastically because of the lack of ships.

This basic economy program is a broad concept of good neighbor action on behalf of the peoples of the

Americas. Therefore let us look at it from the point of view of the individual. Take the case of Jose, a Brazilian farmer in the northern state of Ceara. Jose has been through lean years of drought. He can't make ends meet. His family is hungry. He would like to get a new start in the newly developing rubber area in the Amazon. But the rubber trees are 2,000 miles or more away and he has no money for travel. He wonders too how he would eat and keep well. So Jose thinks perhaps he had better stick to his dry acres.

But Jose changes his mind. Why? Because Brazil and the United States have gotten together to solve just such human problems. Doctors and engineers have gone to work. They are distributing antimalarial drugs. Jose finds that food and medical care will be provided. And so, after a long trek to the Amazon, Jose starts life afresh as a rubber tapper.

Or take the case of Pedro, a banana worker in Nicaragua. Pedro had been making good wages, but he did not have much in reserve when he lost his job.

Then one day Pedro heard a fiber development project was starting nearby, that his government had entered into an arrangement with the Yankees to undertake this program. Pedro didn't ponder the abstractions of inter-American cooperation. But he did know that the project meant work, wages, food for his family. And Pedro has become one of the millions of human beings who are seeing in tangible deeds what being a good neighbor means.

The stories of Jose and Pedro can be multiplied against a variety of local conditions and production problems—guayule workers in Haiti, workers on a rail construction project in Brazil's iron rich Rio Doce Valley, rubber gatherers in Central America, miners in Bolivia, quinine plantation workers in Central America.

Jose and Pedro are the human foundations of the Americas. They can understand the meaning of inter-American cooperation when it takes the tangible form of medicine, hospitals, screened shelters, food. Jose and Pedro can understand the economic value of a new sisal plantation or a new road. They mean a chance to work and the hope for a better future for their children. Thus Jose and Pedro are coming to see that through inter-American cooperation the fight for freedom and for opportunity is their own fight.

This basic economy program is to strengthen the human resources of the hemisphere, both for the war period and for the long pull after the war. It supports urgent immediate needs for wartime defenses and production. It bolsters morale against the shocks and hardships of wartime dislocations. It builds for the future of inter-American unity on a foundation of inter-American friendship and cooperation. The hospitals, nursing schools, health centers, the new practices of agriculture, the new roads and, most important, the economically productive and bodily sound Americans will provide the basis for expansion of trade among the Americas and a steadily rising standard of living. The resulting economic prosperity throughout the hemisphere will afford the best assurance for the social security and the peace for which we are fighting today.

Commerce Building.

AMERICAN MEDICINE'S CONTRIBUTION TO POSTWAR MEDICAL SERVICE

MORRIS FISHBEIN, M.D.
Editor, Journal American Medical Association and Hygeia, the Health Magazine
CHICAGO

Starvation and epidemics do not recognize national or racial boundaries. Typhus in Russia, plague in China, dysentery in Africa or famine in Greece may mean disaster to Italy, Germany, Japan or the United States. Before this war is over the people of the totalitarian governments will awaken to the fundamental biologic truth that in a world like ours every man is his brother's keeper.

The statesmen who are concerned primarily with the economic rehabilitation of the war-torn world have recognized the vital character of medicine's contribution. In an address made by Sumner Welles, Undersecretary of State, at Rio de Janeiro on January 15, he said:

> My government believes that we must begin now to execute plans, vital to the human defense of the hemisphere, for the improvement of health and sanitary conditions, the provision and maintenance of adequate supplies of food, milk and water, and the effective control of insect-borne and other communicable diseases. The United States is prepared to participate in and to encourage complementary agreements among the American republics for dealing with these problems of health and sanitation by provision, according to the abilities of the countries involved, of funds, raw materials and services.

We are concerned, however, not only with the problems of the Americas. That would be isolationism as much as an attempt to limit our concern for the postwar world wholly to the United States. The scope of the world's needs was well expressed by the Hon. John G. Winant, our ambassador to the Court of St. James, at Durham on June 6, 1942. He said:

> When war is done, the drive for tanks must become a drive for houses. The drive for food to prevent the enemy from starving us must become a drive for food to satisfy the needs of all people in all countries. The drive for physical fitness in the forces must become a drive for bringing death and sickness rates in the whole population down to the lowest possible level. The drive for manpower in war must become a drive for employment to make freedom from want a living reality.

The ideals of this platform merit the support of every one who loves his fellowman. Particularly will they have unanimous endorsement from the physicians of our nation, who know more intimately than can any others the relationship of poor housing and malnutrition to sickness and death and who know as well the importance of scientific diagnosis and treatment in overcoming the devastation that disease can effect.

The nature of the problems is clear. The answers, however, are not quite as obvious. Many a statesman is devoting serious consideration to the economic aspects of world reconstruction and rehabilitation. The costs of such procedures will no doubt fall most heavily on those portions of the world best able to bear them. Certainly some lands and some nations have been so completely devastated by the attacks of the aggressors and by the fact that they have been the battlefields on which the decision has been made that they can only beseech aid, offering little of their own as a help in the process. Until the sick and the starved and

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the disabled in Greece, Poland, Czechoslovakia, the Netherlands, Denmark, Norway, Belgium and France, in China and in the South Seas have been restored at least to some degree of physical fitness, little can be anticipated in the contribution either of materials or of work by these shattered peoples. The obligation must rest largely on the more capable and the more wealthy of the United Nations to aid not only the peoples of the countries that have been most war torn but also the people of the nations that have been defeated. I would not presume to speak as one versed in the problems of world economics. I do know that the leaders who assume the responsibilities for speaking in these matters have already called and will expect to call more definitely in the future on the medical profession and the medical resources of our country to meet the needs of the world for medical care and medical services.

Following World War I, many serious problems confronted medicine in all the warring nations. That experience indicates the importance of a careful consideration now of the demands that will be made and of the resources in men and materials that will be available for meeting those demands. The economic utilization of men and materials and the extent to which the morale of the men concerned is based on a wish for doing the most that can be done rather than on compulsion is likely to play a considerable part in the ultimate efficiency of the procedures.

THE SUPPLY OF PHYSICIANS

The medical schools of the United States have been for some years making available to the American people physicians adequate in number to our needs—in fact, more adequate in proportion to the total population than are available in any other country in the world. At the beginning of this global war we had one physician to every 700 people. By Jan. 1, 1943 we had established as a standard one physician for every 1,500 people, a number considered adequate to serve the needs of our population by the authorities assigned the responsibility in this matter. Great Britain today has one physician to approximately 3,000 people in its civilian population, and Sweden one to every 2,500. No one knows the ratio of doctors to population in Germany, but it has been said that in many parts of Germany it is one to 8,000 or one to 12,000. The number of scientific physicians available for the care of the population of China is so small as to be insignificant in relationship to its needs.

Admiral McIntire recently predicted that it may be necessary following this war to hold within the ranks of our Army and Navy at least one third of all the physicians who have been enrolled so that they may be available to aid medical service that will be required in the various parts of the world to which they have been sent. American medicine has already been planning to meet these needs. The accelerated programs in the medical schools, the deferment of the premedical and medical students, the Army training programs for premedical and medical students, the maintenance of internships and of residencies in the specialties are all part of the careful planning and of the program that was ultimately adopted.

Such information as is now available indicates that the medical schools of Belgium, the Netherlands, Poland, Czechoslovakia and France have been devastated and probably wholly discontinued. The great medical schools of Germany, which were once her pride and which were once accepted by all the world for their leadership, have become today the degraded tools of Germany's war-mad leaders. Today their restricted curriculum includes the unscientific philosophy of German racism and the concept that every man must be trained as a laborer and a soldier in his professional equipment. The restoration and rehabilitation of the medical schools of the world may place a tremendous demand on the physicians and particularly on the medical educators of our country.

A medical school consists not only of great buildings with laboratories and libraries but primarily of medical teachers. The world will need medical teachers as it has never needed them before. The medical schools of the United States and those of the Allied Nations capable of meeting the demands will need to welcome into their halls the young men of many of the nations of the Americas and of other portions of the world. Our own educators may be called to other parts of the world to aid in the reconstruction and revitalizing of their medical institutions. On the doctors of those countries who remain after the war will fall the major portion of the tremendous burden of the care of their own sick, but even for this service many of our doctors may be required.

Typhus or malaria anywhere in the world menaces our people unless we set up in those nations as well as on our own shores the effective barriers that preventive medicine has for epidemic disease. Without such barriers and without the scientists capable of establishing and maintaining them, the success of winning the war may be negatived by the devastation and destruction of an epidemic like that of influenza which swept the world following World War I.

MATERIALS AND SUPPLIES

Modern medicine depends on the use of medicaments and equipment which have been developed as a part of the great advancement in medical science that has occurred during the past fifty years. During World War I we learned much of what a shortage in an essential drug can do. Some of us still remember the voyage of the submarine *Deutschland* and its cargo of salvarsan. We still remember the failure to duplicate the drug using the patents and the processes that had been supplied to our Patent Office and the manner in which our own great research institutions overcame those deficiencies. Today that story has been somewhat duplicated by the record of atabrine.

But many another mistake of World War I may yet be repeated in this global war unless we consider now the problems that are certain to arise. Colonel Shook has indicated today the nature of those problems.

Following World War I vast amounts of medical supplies sent by this nation abroad were sold at public auction, some of them given as an outright gift to the countries in which they were at the time of the Armistice. Some of the drugs, including narcotics, which had been given to one nation were shipped back to the United States and sold in this country at prices below those of the same products made by American manufacturers in the postwar period. Some of the narcotics appeared in the illegal drug traffic of the world. Little consideration was given to the determination of the purity or quality of some of these materials, which obviously were greatly deteriorated in shipment. I have heard that some of these drugs were still being reprocessed and sold in 1938. I know of tetanus that was caused by the sale of contaminated ligatures thrown on

the market after the war ended. I know that one manufacturer purchased back from the Army a considerable quantity of an antiseptic drug so that he might be able to sell it to the Navy, which still needed some of that product. I know that even in this war some 2½ tons of drugs have been shipped to one of the war areas without adequate consideration of the needs of the area concerned, the amounts of the specific drugs that might be required and, indeed, of whether or not some of them would be required at all. Certainly the time is not too soon to begin serious planning with relationship to the needs of the world for medical supplies.

Fortunately again for our country, the growth of our pharmaceutical industries during the past twenty years has been one of the most phenomenal developments of all time. These industries have supplied amounts of blood plasma through a cooperative effort with the Red Cross, the Army, the Navy and the people of this country so great that they beggar the imagination. During 1943 more than 2,000,000 people of this nation will contribute their blood for this purpose. They have supplied quinine and atabrine and other antimalarials in amounts sufficient to guarantee to the peoples of the United Nations and to the armies and navies and to the peoples of the countries in which the battles are being fought some control over this most devastating disease. They have produced the essential vitamins of which thus far we have knowledge, in amounts sufficient to overcome at least the fundamental deficiencies that would have resulted otherwise in worldwide outbreaks of scurvy and rickets and many other diseases. They have met the demands for the sulfonamides, the miracle drugs of modern medicine, in terms of tons and tons and tons. As a result pneumonia, which might have incapacitated many hundreds of thousands of men, has a death rate of less than 1 per cent in our troops. Whereas 1 in 3 of those who had meningitis in World War I died of that disease, the figures for this war are 1 in 20. From wounds of all types in the Solomon Islands and in Guadalcanal there was a death rate of less than one half of 1 per cent, which might have been 5 to 7 per cent had we been compelled to depend on the drugs and the methods that prevailed in 1918.

This is in large part the contribution of the American pharmaceutical industry. Practically every one of the great organizations in the field has received from the Army and Navy the award of the E which indicates the magnificent part it has played in the war effort.

Physicians, therefore, and the medical industries of the United States have done and are doing their part in the winning of the war. The health of our people is magnificent, as shown by the low sickness and death rates that have prevailed among us for many years. These accomplishments are a tribute to the quality of American medicine, to the United States Public Health Service, to our state and local health agencies and, perhaps above all, to the gradual evolution in the United States of our own system of medical service.

The movements of great masses of people to meet the industrial needs of the war created in many portions of our country problems of housing and feeding and disease which have been answered satisfactorily in most places by the cooperative efforts of government and private agencies. In many instances leadership has come from the industries concerned. In some areas organizations of physicians have done much to facilitate the provision of the factors necessary for health. In some areas organized labor assumed responsibility. Such agencies as the Federal Housing Administration, the Farm Security Administration, the Procurement and Assignment Service for Physicians, Dentists and Veterinarians, the United States Public Health Service and the Children's Bureau have cooperated with practitioners of medicine and with local and state public health officials to meet the needs of the emergency. Wherever such cooperation has obtained, the results have been most fortunate for the people concerned. The initiative has for the most part rested with the people themselves. The element of compulsion, except through such pressures as arise from public and professional opinion, has not been necessary to secure effective action.

COOPERATIVE ACTION

The time is not too soon for us to establish the necessary organizations for control of medical rehabilitation and reconstruction. Already in England there has been accumulated a mass of data showing the food situation in the occupied countries. There has been agreement on a basic list of drugs which will be needed in those countries as they are liberated. Estimates have been made as to the fundamental materials required for feeding 100,000 people of various nationalities. Plans have been drawn up for dealing with expectant and nursing mothers and for coping with the large numbers of cases of tuberculosis and typhus that are anticipated. Indeed the one death rate that has risen definitely in all the warring countries has been the rate for tuberculosis among certain age groups. Some committees are considering the steps that will have to be taken by instruction and propaganda to restore suitable standards of nutrition and to prevent the increase of infectious diseases. We know that it is possible for human beings to survive for a considerable period of time on something less than an optimal diet, but we know also that, the longer such minimal diets are used, the more extensive become the deficiencies and the more difficult their control.

An editorial recently published in the *British Medical Journal* indicates how our British colleagues have been considering the problem of relief following the war. The editorial said:

> When the time comes for relief in Europe the Allied Nations will be united in a herculean task. The work must be carefully prepared beforehand, and plans are already engaging the attention of many persons and official committees. The first and most urgent requirement will be the provision of food and shelter for the starving, the refugees and the destitute. Then will come medical care of the sick, reorganization of the social and medical services and the setting into motion of agriculture and industry. For all this planning there must be a headquarters staff, under which the technic of relief and its specialist problems will have to be worked out in detail by *ad hoc* committees from among Allied representatives. The administrative capacity and pooled resources of the world will be taxed to the utmost. Medicine has an important part to play in this humane work of relief, and what it can do is now being discussed. Doctors and nurses, it is obvious, will be wanted for medical relief. The planning and carrying out of nutrition schemes; measures for the control of typhus, malaria, enteric; the danger of the present continent-wide increase in tuberculosis—these are but some of the tasks for international medicine in the postwar period.

In every one of the occupied nations, infant mortality rates are rising steeply and are said to be four times as high as they were in 1939. The edema due to starvation of protein is seen everywhere and degeneration of tissues due to deficiencies of vitamins is common.

The incidence of tuberculosis has increased from 30 to 80 per cent in different parts of Belgium.

In Great Britain a special advisory group has been established to advise the minister of health in relationship to all these matters. In Washington today there are separate advisory medical groups for each of the many agencies. If there is any one need that confronts us now, it is the need for the establishment of a planning body representative of the best statesman-like and medical opinion that the nation can offer to which may be referred the many problems of a medical character that are already arising as part of wartime and postwar rehabilitation. For Northern Africa nutritional and medical rehabilitation are already under way. As France and Greece and Czechoslovakia and Poland and Belgium and the Netherlands are freed from the yoke of the aggressors, their people also must be provided with food, with medical and health supplies and with medical service. Every moment that is lost in confronting starvation or epidemic disease means more deaths and more disability. The medical profession of the United States is ready to join with leaders in every other phase of industry and professional service in planning suitable procedures for these conditions.

THE TREND OF AMERICAN MEDICAL PRACTICE

Thus far I have been concerned almost wholly with the extent to which the American medical profession and American medical resources will be used in aiding all of the postwar world with the marvelous professional skill and the vast quantity of superlative materials that American medical practice and American medical industry have developed. Of equal or greater significance to us in this country is the trend of changes in the nature of medical practice. During the twenty years that have elapsed since World War I the practice of medicine in the United States has been undergoing a continuous and rapid evolution. Many experiments have been initiated in wider distribution of the services of the medical profession and the hospitals. Nevertheless, the fundamental features which have made American medicine the great profession that it is have been retained.

Do those who have gone forth to save democracy want to come back to the America, to the England or to the China that they knew or do they want a new world to result from this conflict? An advertisement which has caught the public fancy says in part:

> Back home to the same town, to the same job you like so much, to the same America we have always known and loved, where you can work and plan and build, where there are no limits on any man's, any woman's or any child's opportunity. That is the America I want when I come back. Don't change that ever. Don't let any one tamper with the way of living that works so well.

Every one of us wants to save all that was good in preglobal war America. We want, above all, the principle of freedom of choice and freedom of opportunity. The very basis of the American democracy has been that principle of free choice—free choice of the school one attends, the newspaper one reads, the church in which one worships, the store in which one purchases, the hospital in which one receives hospital care, the physician, the dentist or the lawyer whom one consults. Beyond such free choice is, of course, the most fundamental of all freedoms for all men—freedom from want. Much has been said of the Beveridge and similar plans as a Magna Charta for the postwar world. The primary concern of the Beveridge plan is freedom from want for the British people. In the United States freedom from want means a job with an income sufficient to enable the worker to provide himself with food, fuel, clothing, shelter and medical care. On the technic by which the work is to be guaranteed these fundamentals of living there has been much debate and disagreement. The technic by which security is provided may mean destruction of the freedoms that are basic in a democracy.

While there has already been a tendency to compare the report of the National Resources Planning Board to the Beveridge report and in fact even to dismiss the former by calling it an American Beveridge report, the contrast in the point of view is so striking as to be easily manifest to any one who reads carefully. The Beveridge report implies a state controlled medical service with the ultimate disappearance of the private practice of medicine. The American statement calls for cooperation between the medical profession and the government and an exploration of the potentialities of expansion of publicly provided medical care and also of the feasibility of methods such as social insurance. Now social insurance does not necessarily mean, I take it, compulsory sickness insurance and a state controlled medical service but equally the variety of plans developing now in many places as part of the American plan. The proposals in the report of the National Resources Planning Board for better coordination of medical and health facilities, for increased use of clinics, health centers and group practice where feasible, and for extended use of the medical technical service are certainly not officially opposed by American medicine. Most encouraging also, however, is the statement on page 459 that recognizes the fundamental principle that democracy is best maintained when the worker remains in control of his own funds. Here is the statement:

> Experience has shown that the provision of economic security in the form of cash payments is not only greatly preferred by the recipients and thus a factor contributing to the maintenance of initiative and self respect, but is also often more economical to the community.

American medicine recognizes its obligation. This conference has served to place before all of us the imminent threat of new post war medical problems. We shall study those problems; we shall plan; we will meet the obligation inherent on us to provide our people with the quality of medical service that has given us the lowest sickness and death rates in the world.

The problem has concerned equally the leaders in the field of medical care in Great Britain. Thus Viscount Dawson of Penn, discussing medicine and the public welfare, wrote in May 1942:

> . . . There are few callings in which there is so big a gap between routine and the best work as in medicine, and no profession needs to be so elastic in its government if it is to be dynamic, not static. Its front line of knowledge is always mobile and often advancing; the men working there need freedom for initiative and should be unfettered by the formulae of administration and, may be, on the other hand, by the demands of practice. And the same considerations hold in the sphere of clinical practice, for though we need ordered planning we must strive to avoid any cast-iron uniformity. Rather do we seek unity amidst diversity; for man, whatever his political colour, is individual, and in illness even more so than in health, and his doctor must remain an individual and not become an official. It is here that medical planning is up against its crucial difficulty, in that it requires collectivism for its fabric and individualism for human relationships. And individualism will not flourish easily within the rigid boundaries

of a state service but needs the freer atmosphere which belongs to the voluntary hospitals' tradition; for in the difficult conditions of a greatly changing world doctors will need not only knowledge but understanding if they are to guide bodies and minds along the straight road of health and content.

This may well define the trend in the evolution in medical practice which we have been undergoing in the United States since 1935. Prepayment plans have been developed according to a variety of contracts. The plans developed have been modified according to circumstances especially prevailing in various areas. The individual participates in the plan of his own volition after he has been shown the evidence of the desirability for the plan and its utility for him and his family. The physicians who participate do so because they wish to be affiliated with the service—not because some all-embracing octopus-like compulsive mechanism placed on the people by the state has made it impossible for him to function as a physician without enrolment in a state-controlled procedure. In a nation like ours with wide diversities of population and industry and agriculture, with a remarkable swing between per capita wealth and per capita poverty, the functions of the federal government may well be utilized toward making certain that all of the people have opportunity for suitable security against unanticipated illness. The medical profession has recognized the necessity for cooperation between the national, state and local governments with the forces of medicine, public health and welfare in the solution of these problems. However, medical decisions in matters of medical care must be made by medical men or there can be no safety for the patients. When medical decisions are controlled by economic considerations, the medical profession must have a voice in those economic factors. As the jobs and the funds available to our workers have become more profuse, workers in great numbers have abandoned sources of free and part-pay medical care to seek out their own physicians. Could there be any better evidence than the records of our hospitals, clinics, dispensaries and eleemosynary medical institutions to prove that the American worker wants to be free in the choice of his medical care?

By their own initiative the physicians of this country will have offered to the nation by 1944 the services of more than fifty thousand doctors (more than one third of all the active practitioners available in this country) to meet the nation's needs in time of war. By their own initiative they seek to give to the postwar world the most that American medicine can give for the restoration of the peoples of the world to health and physical fitness. They do not hesitate in offering themselves; they have been trained in the traditions of American medicine, which say to the doctor:

> A profession has for its prime object the service it can render to humanity. . . . The practice of medicine is a profession.

No greater task has ever confronted the physicians of America than the part they will be asked to play in the planning of medical services for the postwar world. They will meet that obligation as they have met every other call placed on them in the past—voluntarily, bound only by the traditions of their great profession, uncompelled by any arbitrary mechanism such as that founded by totalitarian governments to enslave both their people and the physicians who served them.

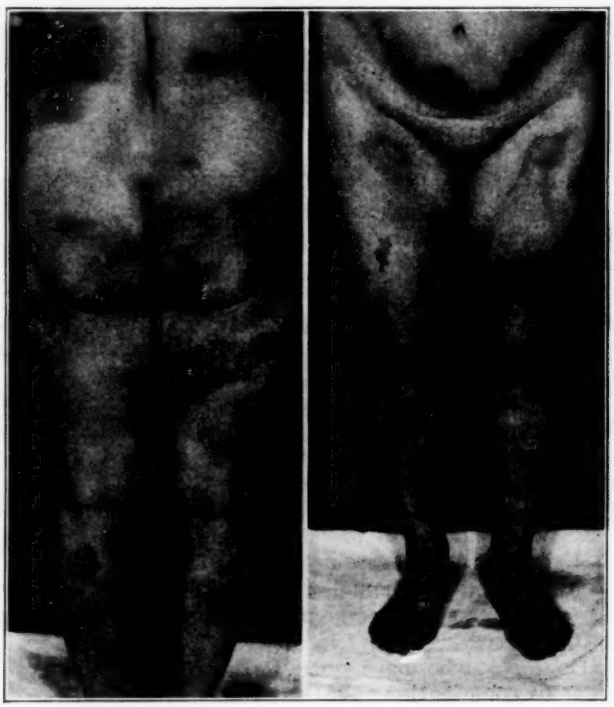
535 North Dearborn Street.

Clinical Notes, Suggestions and New Instruments

CONTACT DERMATITIS FROM OLIVE OIL

RICHARD L. SUTTON JR., M.D., KANSAS CITY, MO.
Assistant Professor of Dermatology, University of Kansas School of Medicine

Olive oil, Olea europaea sativa (Oleum olivae, U. S. P.), is generally believed completely bland on topical application. Many a dermatologic prescription contains it. I have, however, observed trouble resulting from its use. When it is applied to "dry scalp" (seborrheic dermatitis of the scalp) the dandruff is regularly made worse. When it is applied to senile pruritus the result is often unfavorable. Olive oil is not different from any other greasy substance when applied to superficial, vesiculating, autoinoculable, staphylococcic dermatitis, generally known as "infectious eczematoid dermatitis." In this condition any unguent smears the parasites about, prevents their drying and promotes spread of the disease.



Contact dermatitis of ten years' duration due to olive oil.

In the case which I report here the dermatitis was present for more than ten years and its maintenance was evidently due solely to olive oil, for interdiction of its use was followed by prompt cure. As I [1] have emphasized previously, the cure of contact dermatitis is a matter of what is kept off the skin, not of what is put on it. It is an error to try to make the skin heal when the purpose should be simply to allow the skin to heal.

REPORT OF CASE

Miss M. W., a white woman aged 62, a housekeeper, came to the outpatient department of the University of Kansas Hospital on Dec. 27, 1939 because of scattered patches of shallow, scaly dermatitis. It had started more than ten years previously with a few lesions about the right knee, to which she applied olive oil. For ten years she religiously anointed the slightly itchy eruption with this substance and claimed relief by its application. Blood studies, showing slight secondary anemia

1. Sutton, R. L., Jr.: Dermatitis Venenata: Practical Aspects and Innocuous Treatment, J. Kansas M. Soc. **40**: 235-239 (Aug.) 1939.

but no abnormality of consequence, and the absence of lymphadenitis, and the biopsy, revealing only chronic inflammation with parakeratosis suggestive of parapsoriasis, supplied evidence that premycotic mycosis fungoides might be eliminated and that diagnostic possibilities among the rare and recondite dermatoses were unlikely. The scalp was free from seborrheic dermatitis. There was no story of ingestion of drugs. No medication other than olive oil had been used. Therefore she was ordered to stop applying olive oil and to do nothing further about her disease. On Jan. 24, 1940 she was seen and note was made that the eruption had faded and disappeared except for slight residual pigmentation. Objectively and to the patient's satisfaction, she was cured. Treatment consisted of nothing at all, a regimen eminently suited to contact dermatitis in such instances as do not demand bland therapy designed merely to allay symptoms.

SUMMARY

A case of dermatitis of ten years' duration was due to the application of olive oil. In contact dermatitis, what is not done to the skin is more important than what is done.

1102 Grand Avenue.

A METHOD OF RESTORING NERVES REQUIRING RESECTION

WALTER E. DANDY, M.D., BALTIMORE

Delay in resuturing severed nerves always means that the resulting neuromas must be resected from the central ends and the peripheral ends freshened by a shorter resection. The end result of these procedures is to lengthen the gap between the two ends of the nerves. Under such conditions it is rarely possible to bring the two ends together, at least without undue tension on the line of suture. At the elbow, for instance, the gap may be reduced by flexing the arm and holding it in position by a cast for several weeks. But such expedients usually end badly because subsequent straightening of the arm tears apart the line of suture of the inelastic nerves and good function is almost unattainable. In the upper arm and in the leg, the ends of the nerve can be brought together only by freeing long segments of the nerve and even then, if united, the tension is so great that the suture line gives way and ends in loss of function.

It need hardly be added that direct end to end suture is the only method by which nerve function can be restored: and, conversely, if this cannot be attained function of the affected nerve will be forever lost. The natural corollary of this statement is that all nerves should be resutured at the earliest moment compatible with the patient's general condition and infection of the wound in order to prevent the formation of neuromas. If nerves are sutured within the first few days after the accident, the ends can be brought together and all consideration of nerve lengthening avoided. Even in the presence of infection the nerves should be carefully sutured at once and with a very good chance of restored function—at least nothing is lost in the effort. When there is any doubt concerning the preservation of function and severance of the nerve, it is safer to assume that the nerve is cut and expose it at once rather than to assume that it might be intact and later find that operation and inevitable resection of the neuromas is necessary. The former assumption loses nothing, the latter probably means permanent loss.

In the first case here reported, the maximum test of nerve resuturing is presented. All the nerves in the upper arm were divided and when fifteen months later the neuromas were resected and the peripheral ends freshened there was an 8 cm. defect between the ends of the nerves. It was possible to bridge this space only by shortening the humerus an equal amount: this was done by removing an oblique section of the humerus and wiring the ends. Shortening of the arm even to this extreme degree is probably of little concern, particularly with the function of the entire arm at stake. Although the long interval between the time of the accident and that of the repair probably precluded a complete recovery, there was, eight and one-half months following the operation, return of both motor and sensory function in all branches of the resutured nerves.

The same method can be used when a nerve is resected to cure a tumor along one of the nerve trunks in the upper arm or leg. When a tumor is removed with the nerve, the resection of bone should be done at the same time or within a few days thereafter.

CASE 1.—*History.*—A girl aged 13 entered the Johns Hopkins Hospital on March 21, 1933 because of paralysis of the left arm following an accident.

Present Illness.—Fifteen months earlier a piece of flying glass cut the inner side of the left arm midway between the axilla and the elbow. She was exsanguinated, and a transfusion was done. Several hours later the wound was closed by a local physician, who said he could find only one nerve, which he sutured. The wound became infected and drained for a month.

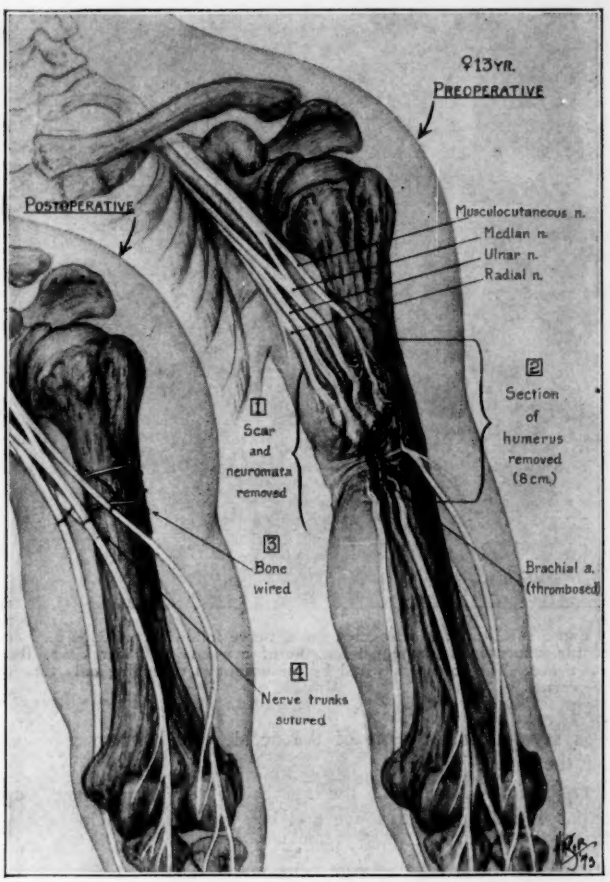


Fig. 1.—Operative sketch of case 1, showing resection of the four nerves in the upper arm and resuture of the nerves following removal of a segment measuring 8 cm. from the humerus.

Examination (Dr. Frank Ford).—Fair flexion existed at the elbow but no extension, the triceps apparently being severed and knotted below the dense broad scar; the peripheral end of the triceps contracted but produced no extension; it pulled the scar. Pronation and supination were performed weakly. Extension and flexion at the wrist were lost and there was no action of the intrinsic muscles of the hand. Cutaneous sensibility was absent over the areas supplied by the median and musculospiral nerves; feeble sensibility existed over the ulnar, a pinprick being recognized as a stinging sensation. A biceps reflex was present; the radial and triceps reflexes were absent. The long flexors of the fingers and wrist supplied by the ulnar nerve reacted slightly to the faradic current and showed a prompt galvanic reaction. The remaining muscles

of the forearm and hand gave no response to faradism and only a slow contraction to strong galvanic stimulation. Apparently the ulnar nerve was the one sutured when the wound was closed and was now showing slight signs of regeneration.

There was a very feeble radial pulse. In the brachial artery a pulse could be obtained only in the axilla (the brachial artery

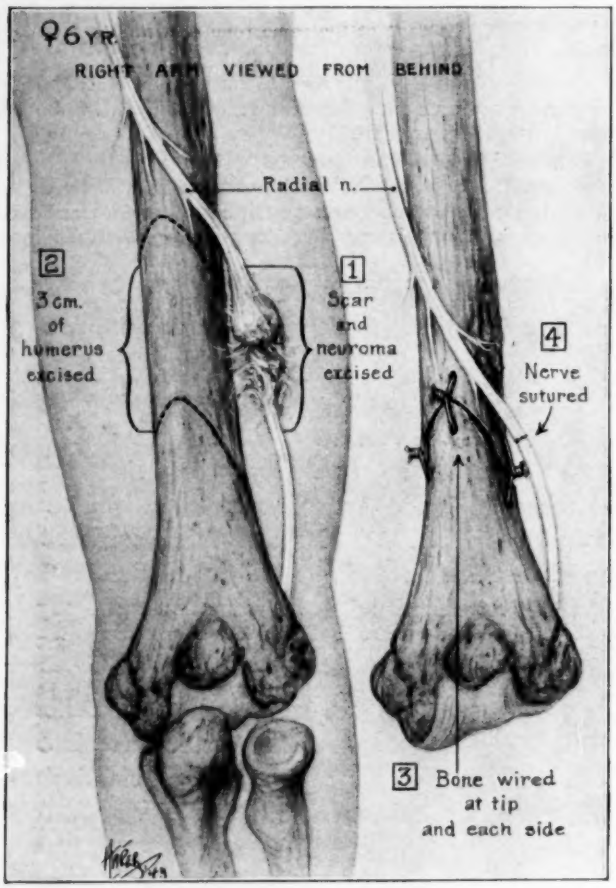


Fig. 2.—Restoration of severed radial nerve following resection of 3 cm. of the humerus and an equal amount of neuroma and scar tissue from the nerve. The bone was wired by three sutures extending only through the cortex.

was severed at the time of the accident and was responsible for the severe bleeding).

Operation.—March 22 the nerves of the upper arm were exposed and dissected above and below the scar. On each of the four big nerves—ulnar, median, musculospiral and musculocutaneous—there was a large neuroma, and all of these blended together into a mass of scar tissue. The peripheral ends of the nerves also entered into and fused with the scar. It was difficult to understand how even the minimal sensory function in the ulnar region could have been retained. After removal of the scar and the extensive neuromas from the central ends an 8 cm. defect (fig. 1) remained between the central and the peripheral ends of the nerves. This had been anticipated when the operation was begun. The only conceivable way to overcome this defect and make an end to end nerve suture was to resect the humerus. Accordingly an oblique section of bone 8 cm. wide was removed from the upper half of the humerus by an electric saw and the surfaces of bone were then wired. The humerus therefore was shortened 8 cm. The four nerve trunks were then sutured end to end without tension. The brachial artery was attenuated and a solid cord thrombosed. The triceps muscle was resutured. Healing was by first intention.

Subsequent Course.—October 24, exactly six and one-half months later, the patient was able to flex the fingers and wrist, but extension was not possible and there was no movement of the thumb or of the intrinsic muscles of the hand. There were some patchy areas of pain perception over the ulnar distribution.

Jan. 3, 1934, eight and one-half months after operation, she could flex and extend all the fingers with fair power. The thumb could be flexed and extended slightly. The wrist could be flexed, and there was beginning extension.

On the next examination, Jan. 10, 1943, ten years later, the elbow could be flexed and extended normally. The wrist could be flexed slightly and extended with more power. Pronation and supination were present in fair degree. There was no flexion or extension of the fingers, which were held in the flexed position. There was atrophy of the interossei and lumbricales. Sensation of all types was normal to the wrist. Below the wrist and over the entire hand and all fingers touch and sharp and dull pain were perceived accurately though less acutely than on the other side. Heat and cold were not recognized.

The end result therefore is good except for the hand and, despite early signs of returning function in flexion and extension of the fingers, these functions were subsequently lost. Sensory return was in all four branches, but to an imperfect degree in the hand. The case demonstrates that, even after a long interval of fifteen months, return of function can be obtained.

CASE 2.—*History.*—A girl aged 6 years was cut on the lower outer surface of the right upper arm by a pane of glass six months before. Wrist drop followed and had persisted unchanged, the radial nerve having been severed.

Operation.—On Feb. 17, 1943 it was found that the nerve had been totally severed. A large neuroma was situated at the musculospiral groove and was resected, together with the upper end of the distant segment and the intervening scar. Three cm. of the lower end of the shaft of the humerus was removed by oblique incisions (fig. 2) and the ends were wired

Fig. 3 (case 2).—Appearance of humerus after shortening 3 cm.

by three small sutures through the cortex only (fig. 3) instead of longer wires around the periphery.

Since the operation has been performed only two weeks, no report on the return of nerve function can be made.

This operative attack is of course applicable to severed nerves in the forearm and leg. It is the only way that function can be restored after an interval.

Johns Hopkins Hospital.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT. HOWARD A. CARTER, Secretary.

MASSACHUSETTS VISION TEST ACCEPTABLE

Submitted by the Commonwealth of Massachusetts, Department of Public Health, Division of Child Hygiene, 73 Tremont Street, Boston.

Distributor: Welch Allyn Company, Auburn, N. Y.

The Massachusetts Vision Test is a method of school vision testing which provides for the screening of children to determine the need of detailed ocular examination and possible treatment. A notable feature of the test lies in the fact that it can be applied to young children. Five and 6 year old children needing ocular attention can be detected when the test series is applied by those skilled in the handling of young children. Errors which occur in the testing by nonprofessional persons are said to result in more children being referred than actually require correction by the specialist.

The test series is composed of three parts:

Part One screens out cases of low visual acuity. The charts are constructed to minimize the possibility of memorizing. Illumination of the charts is standardized. The Snellen illiterate E is employed throughout because of the variation in difficulty between different letters and different numbers.

Part Two detects those who may pass the visual acuity tests but who have a hyperopic error which is latent and may require correction.

Part Three indicates cases in which there is difficulty in using the two eyes together.

The equipment provided for testing includes:

Illuminator.—Equipped with two tubular light sources which provide satisfactory illumination over the surface of the Snellen chart. In establishing the standard of proper illumination an especially designed instrument was evolved by the manufacturer.

Snellen Chart.—A card divided into four rectangles. The upper two rectangles each contain two lines, one with a 20/20 rating ("20"), the other a 20/30 rating ("30"). The third rectangle contains two lines of symbols, one with a 20/40 rating ("40") and the other a 20/50 rating ("50").

Within the fourth rectangle are three symbols of different sizes with ratings designated.

Occluders.—A supply of clean square pieces of stiff paper or cardboard measuring 3½ by 3½ inches to be used by the examiner for covering the eyes. (These may be prepared in the class room beforehand and should be disposed of after use in each case.)

Plus Sphere Test.—A pair of ordinary spectacles marked + 1.50 for use in third grade and above. The lenses should be cleansed after each using with soap and water. (A second pair marked + 1.75 is provided for use with children in the kindergarten and the first and second grades. The frame is of a lighter color to distinguish it from the spectacles used for the older children.)

Maddox Rods.—Two pairs of spectacle frames containing no lens for the left eye and a small black disk with a central red ribbed glass section for the right eye. In one pair the ribs are vertical, in the other pair horizontal. (Smaller pairs of frames are provided for use with children in the kindergarten and the first and second grades.)

House Chart.—A wall chart showing a picture of a house with an opening in the window through which a small electric light bulb is inserted.

Pinhole Test.—A small black tube with rectangular front section containing a pinhole opening and a cord attached at one corner. A perforated picture is affixed over the pinhole opening. A small electric light bulb is inserted in the tube to provide a point light source at the pinhole aperture.

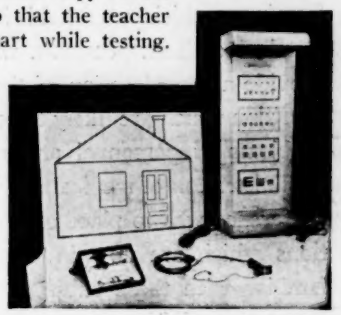
In the instruction booklet for the test it is recommended that the testing be done in a room in which a 20 foot distance between the child and the test charts is available. Since the illumination for the tests is supplied electrically, window light is neither necessary nor desirable. A wall as far away from windows as possible should be chosen. Window shades should be drawn so that beams of light do not fall near or on the charts. (The room need not be completely darkened, but a minimum of light will facilitate execution of the tests. Additional covering may sometimes be necessary to eliminate patches of light.)

The following directions for the test are taken from the instruction booklet:

Place the Snellen chart and the house chart side by side so that the center of each is about 40 inches from the floor. Arrange the electrical attachments in such a way that the illuminator, the lighted house chart and the pinhole test can be used in sequence.

Measure a 20 foot distance on the floor from the charts to establish the position at which the child is to sit while being tested. A table for holding the test materials and for recording results is placed to one side of this position. If a light control switch is provided, it should be placed on the table within easy reach of the tester.

The tester sits with the back toward the charts, facing the child, so that squinting, peeking or turning the head can be observed and corrected. A separate desk copy of the Snellen chart is provided so that the teacher need not watch the wall chart while testing.



Massachusetts Vision Test Charts.

In the Council's examination of the unit it was found that light meter tests of the illuminated vision chart showed 11 foot candles at the top and bottom of the chart and approximately 6 foot candles in the center.

The arrangement of the distance vision chart expedites rapid and reasonably accurate elimination of eyes with approximately normal vision. The test letters (illiterate E's) are arranged in four groups with different colored borders. Each group consists of two lines. The upper two groups each contain a 20/20 and a 20/30 line of test letters. The lower two groups contain letters ranging from 20/40 to 20/100. The use of plus 1.50 spherical lenses in a spectacle frame roughly enables the examiner to eliminate the lower hyperopias.

The muscle test is based on the assumption that vertical phorias of more than 2 prism diopters and lateral phorias of more than 5 prism diopters potentially necessitate further examination and possible treatment. The near test, which is especially adapted to horizontal phorias, might be dispensed with if time is limited.

The Council reached the following conclusion concerning the apparatus:

1. It is a relatively simple and complete test, especially adapted for school children of the lower grades. Distance vision with elimination of lower hypermetropias and myopias as well as muscle balance are roughly measured.

2. It is purchasable as a single unit, which increases its desirability for schools and factories.

3. In this test the same distances are customarily used for measuring vision and muscular anomalies which are employed in office and hospital practice. Thus it differs from stereoscopic tests.

4. The instrument is apparently a pioneer in grouping several fundamentals into a single unit, adapted for mass testing of visual function by nonmedical examiners.

The Council on Physical Therapy voted to accept the Massachusetts Vision Test for inclusion on its list of accepted devices.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 1, 1943

PLANNING FOR POSTWAR MEDICAL SERVICE

This issue of THE JOURNAL is devoted largely to publication of the papers read before the National Conference on Planning for War and Postwar Medical Services, which was held in New York in March. Readers of THE JOURNAL will note that these papers provide a consideration of the problems of disease and nutrition which are likely to confront the postwar world, problems of personnel and materials and methods of administration of medical services. The purpose of that conference was to place on the table many of the questions which are now in the minds of those who are familiar with these subjects. The conference did not attempt nor did it propose to offer any plan for changing the nature of medical practice in the United States or for meeting world needs.

Any one with foresight realizes that there will be great changes in the postwar world. The medical profession does not fear change regardless of the aspersions of those who constantly assail it as a reactionary and too conservative group. For many centuries the medical profession has adjusted itself to the tremendous changes wrought by new discoveries and technics in the prevention of disease and in the care of sickness; why should it be apprehensive regarding additional changes? The medical profession does realize, on the basis of many years of scientific observation, that change in itself is not necessarily beneficial. There may be change for the worse as well as change for the better. Trained in the scientific method, the physician studies his case and changes his treatment to meet new signs or symptoms, keeping in mind always the aphorism to hold fast to that which is good.

Before the people and the medical profession of this country there are now at least two formal proposals for development of medical care as part of national programs of security. The fundamental tenets of the Beveridge plan have been widely reported in the public press, and the considerations of the Beveridge plan in Great Britain have been reflected by the correspondence from London in THE JOURNAL. On March 31 a special session of the representative body of the British Medical Association considered some proposals from the council of that organization relative to participation by the association in meeting the desires of the British government relative to the Beveridge plan. The council of the British Medical Association had indicated its belief that complete medical participation should be dependent on adoption of the Beveridge plan as a whole. Apparently it was feared that the medical aspects of the plan would be thrown to the British people as a "sop." Moreover, the council of the British Medical Association felt that the medical profession would be definitely opposed to a complete system of state medicine but would be willing to participate in a plan for medical service for all, provided physicians would be given opportunity to practice privately and participants in the plan would be given opportunity to seek private medical care for which they would pay out of their own funds. The results of the deliberations of the representative body of the British Medical Association are not yet available. In the meantime, however, it seems that the Parliament is proceeding to give special consideration to the medical proposals with the idea of making the beginning on the Beveridge plan with medical services exactly the "sop" that the British Medical Association must have anticipated on the basis of previous performances by political minds. Here in the United States representatives of American business and the other professions have begun to realize that the tossing of medicine as a "sop" to the proponents of state medicine is merely a concession which does not delay but rather gives impetus toward complete socialization and destruction of private enterprise.

The report of the National Resources Planning Board, which the President of the United States sent to the Congress in February, was hailed as an American Beveridge plan. Actually the National Resources Planning Board was established under President Hoover and most of the report was available more than a year before it was sent to the Congress. Those sections having to do with the medical phases of security had been published in pamphlet form in September—before the Beveridge plan had been made public. A recent Gallup poll indicated relatively little awareness by the American people of the content of the report of the National Resources Planning Board and indeed relatively little interest in the report. Most of the discussions concerning it seem to be appearing in periodicals like the *New Republic*, the *Survey Graphic* and the *Nation*, devoted to "little groups of serious thinkers." The report does not deal with details; it consists largely

of generalizations which incline toward the general point of view that action toward advancement of the health of the nation proceed along the following lines:

(*a*) Health measures and adequate nutrition in order to eliminate all diseases, disabilities and premature deaths which are preventable in the light of existing knowledge, through:

1. The development of adequate public health services and facilities in every county within the country.

2. The development of a health program for mothers and children ensuring remedial treatment as well as diagnosis and advisory services; maternal and child health clinics, and health services in the schools.

3. Protection of workers whether in the factory or on the farm from unnecessary accidents, controllable occupational diseases and undue fatigue.

4. Continued support from public and private funds for public health research and education with a view to the progressive expansion of the frontiers of control over health hazards.

5. Continued support for public and private agencies engaged in the dissemination of knowledge of sound nutritional principles and practices. Especial attention should be devoted to demonstration work in the schools, the factories and farming areas.

(*b*) Assurance of adequate medical and health care for all, regardless of place of residence or income status and on a basis that is consistent with the self respect of the recipient, through:

1. Federal appropriations to aid states and localities in developing a system of regional and local hospitals and health centers covering all parts of the country.

2. Assurance of an adequate and well distributed supply of physicians, dentists, nurses and other medical personnel.

3. Expansion and improvement of public medical care for needy persons through larger appropriations and through increased cooperation by and with the medical and dental professions.

4. Immediate action by government in cooperation with the medical profession to formulate plans which enable the patient to budget expenses over a reasonable period and to contribute toward the costs of care according to his ability, and which at the same time assure to medical personnel a decent livelihood commensurate with the high costs of their professional training.

The mark of intelligent man as contrasted with the higher apes is ability to plan for the future. On the medical profession primarily rests the obligation for much of the active work of reconstruction and rehabilitation of the postwar world. For such work the medical profession must begin to prepare now. Intelligent man does not repeat the mistakes of the past. Surely we would be unintelligent if we did not do everything in our power to meet our obligations so that the world would not again be faced by the disaster and catastrophe that followed World War I. As President-Elect James E. Paullin said in opening the National Conference on Planning for War and Postwar Medical Services, "The organizations we represent are composed of people who are willing to begin now to see that all of their personnel and scientific facilities are made available to help win this war; we are equally anxious that our talents, scientific achievements and services be made available to all nations and all peoples in planning for postwar medical service, not only to our own country, but to the countries of our allies and to the oppressed of the Axis dominated and controlled peoples."

In his opening remarks at the banquet Mr. Basil O'Connor, president of the Finlay Institute of the Americas and of the National Foundation for Infantile Paralysis, said in part:

The prevention of disease, the promotion of health, the determination of nutritional deficiencies, the provision of food and of medical and health supplies and of trained, scientific personnel are problems which already confront our own people and those of other nations of the world.

The question of medicine and health will, of course, be a part of postwar relief in general, but it should not be submerged in postwar relief or confused with postwar reconstruction. Postwar health problems in the United States need not necessarily be any part of postwar relief; and yet, postwar reconstruction in other countries, in so far as it relates to health and medicine, may have a very direct bearing on postwar health problems in the United States.

The subject of postwar health problems, both at home and abroad, is sufficiently enormous in itself to be kept separate and distinct from other postwar activities, for the moment at least. Of course, postwar health activities must synchronize with postwar reconstruction, but they must not be considered secondary.

Just a month ago, Melville MacKenzie, principal regional medical officer of the British Ministry of Health, made the following statement:

"In the three years following the last war, more people died from famine and preventable diseases than had been killed in the war itself, and their deaths were largely the result of administrative chaos in relief."

I think we all admit the existence of the problem. I think we all are cognizant of its seriousness. I think we all are aware of the difficulties involved in its administration, and I know that we all are fully aware of the necessity of preparing to meet it now.

Every moment that is lost in confronting the threat of epidemic disease or of starvation, either at home or abroad, gives these horsemen of the Apocalypse greater speed in their carrying of death.

From the papers published in this issue of THE JOURNAL and from the considerations here presented, it is apparent that postwar planning for medical services is a subject sufficiently large and important to demand the best thought and consideration that our nation can afford. In meeting these problems there should be no piecemeal planning; the problems must be considered as a whole. The programs adopted in medical rehabilitation of the occupied countries and the action by the British Parliament on the medical aspects of the Beveridge plan are likely to affect seriously the nature of medical practice in our own country. The nutritional problem of the world is dependent for its solution on scientific diagnosis of nutritional deficiencies. The provision of medical personnel of all kinds adequate to meet the needs of the postwar world will throw a tremendous burden on American medical education. Certainly the time is not too soon to suggest that the government of the United States establish as soon as possible a mechanism for giving to these questions the analysis and consideration that they deserve and for suggesting the steps that may be followed under a democratic government for their solution.

EXTRAHUMAN SOURCE OF POLIOMYELITIS

Virus infected rodents may be the source of outbreaks of human poliomyelitis, according to a recent report by Jungeblut and Dalldorf [1] of Columbia University. Five cases of poliomyelitis occurred during September and October 1942 within a sharply circumscribed half square mile area in White Plains, N. Y. The cases occurred in rapid sequence and were the only cases of poliomyelitis reported in White Plains for over a year. Two cases, however, had occurred in the same restricted area during the previous year. The 1942 epidemic involved 2 adults and 3 children, of whom 2 died of bulbar paralysis while 3 recovered with extensive peripheral paralysis. Microscopic study in the 2 fatal cases revealed severe and typical poliomyelitis lesions of the cord and medulla.

In the search for possible extrahuman sources of this epidemic a dead gray house mouse, which obviously had been dead for only a short time, was discovered in the basement of the home in 1 of the fatal cases. A second gray mouse was trapped in the same basement. Additional house mice, dead or alive, were collected in other parts of the epidemic area. Ten per cent saline suspensions were prepared from the glycerated brains of these mice and injected intracerebrally into white mice. Definite symptoms were observed in white mice injected with three different suspensions: one prepared from the dead mouse, one from the trapped mouse found in the house and one from another mouse trapped in the immediate neighborhood.

In the injected mice characteristic prodromal symptoms appeared after an incubation period of from five to fourteen days, progressing in some animals to a fatal paralysis of both front and hind legs. The infection thus far has been propagated through twelve serial passages from these fatal cases. By the third serial passage the virulence was considerably increased so that it now became infectious for hamsters and cotton rats, in which it produces a typical prostrating paralysis. Cultural tests showed that all serially infected brains were bacteriologically sterile. The infectious agent was readily passed through a Seitz filter.

In the fully developed paralytic disease in white mice microscopic examination revealed extensive destruction of the anterior horns in various levels of the spinal cord, similar to the clinical picture of "rodent poliomyelitis" [2] and of mice paralyzed with the mouse adapted Lansing strains of the human virus.[3] The serums from 2 of the 3 local convalescent patients neutralized this virus in vitro. From such evidence the New York investigators concluded that the dead and trapped mice of the local area were presumably suffering from the same virus infection as the human patients.

Confirming this conclusion, Jungeblut tested the mouse infectivity of the brain and cord in the 2 fatal human cases. Intracerebral injection of the material from 1 cord caused a prostrating paralysis with typical lesions in 1 monkey. The cord material from this monkey caused death in a hamster on the twentieth day, from which point on the disease was readily transmitted serially in both hamsters and mice by either the intracerebral or the intraperitoneal route. This passage virus was neutralized with poliomyelitis hyperimmune horse serum and also with the 3 convalescent human serums from surviving patients. The viruses isolated from the dead house mouse and from the fatal human cases were therefore apparently identical in specificity and differed only in relative virulence. More detailed studies are now in progress.

The observations of Jungeblut and Dalldorf may well constitute one of the most important contributions to the epidemiology of poliomyelitis of the present decade, since it is the first time that a probable extrahuman source of human poliomyelitis has been supported by experimental evidence. Faber's [4] recent demonstration of the hypersusceptibility of the oropharyngeal surface to virus of poliomyelitis adds to the concept of human poliomyelitis as a mouse borne food infection.

1. Jungeblut, C. W., and Dalldorf, Gilbert: Am. J. Pub. Health **33**: 169 (Feb.) 1943.
2. Olitsky, P. K., and Schlesinger, R. W.: Proc. Soc. Exper. Biol. & Med. **47**: 79 (May) 1941.
3. Lillie, R. D., and Armstrong, Charles: Pub. Health Rep. **55**: 718 (April 26) 1940.
4. Faber, H. K., and Silverberg, R. J.: Science **96**: 473 (Nov. 20) 1942.

REFRIGERATION (CRYMO-) ANESTHESIA

Future generations may find it difficult to understand why it is taking us so many years to appreciate the significance of reduced temperature. Little thought has been given to temperature physiology by most of us, except for rather empirical fever observations. Attempts are still made to keep tissues at "normal" temperature in spite of the rebellion of many patients with peripheral vascular disease. The usefulness of maintaining life processes at a reduced rate by lowering the temperature is still not generally understood. Perhaps this is due in part to the erroneous tradition that external heat should always be applied for the prevention and treatment of traumatic shock.[1]

Recent reports indicate that in combat areas military surgeons are largely occupied with the care of injuries of the extremities. The older methods of anesthesia for these cases are not completely satisfactory. In minor cases general anesthesia frequently seems out of proportion to the primary condition, and in severe cases the added burden may be dangerous.

Life processes, in common with chemical reactions, have a speed which is profoundly influenced by temperature. Oxygen consumption of the tissues can be reduced about 13 per cent for each degree centigrade.

1. Cooling in Shock, editorial, J. A. M. A. **121**: 432 (Feb. 6) 1943. Waters, R. M.: Cooling in Shock, ibid. **121**: 783 (March 6) 1943. Wakim, K. G., and Gatch, W. D.: The Effect of External Temperature on Shock, ibid. **121**: 903 (March 20) 1943.

When a tourniquet is applied and the extremity is packed in ordinary chipped ice (without salt) the oxygen demands are reduced sufficiently to prevent necrosis for many hours. The skin temperature falls to 2 to 4 C. and surgical anesthesia is complete within about two hours.

This method should not be confused with placebo freezing with ethyl chloride spray, which is quite unsatisfactory and objectionable. True refrigeration anesthesia was first used for amputation of partially gangrenous extremities of patients in the older age groups.[2] There has been caution in applying it to traumatic cases.[3] Refrigeration without a tourniquet is useful but not completely anesthetic.[4] Refrigeration with a tourniquet affords surgical anesthesia and does not of itself require amputation.

If it is necessary to demonstrate the presence or absence of circulation in tissue of doubtful viability, the tourniquet can be loosened, but this results in loss of anesthesia as soon as the tissues are warmed. The manufacture of sterile ice is neither difficult nor expensive: with proper equipment it can be made by medical units in the field.

Each anesthetic method has its own difficulties and disadvantages. Cooling inhibits or delays inflammatory reactions and the autolytic changes that are familiar as the gross evidence of gangrene.[5] Failure to appreciate these refrigeration phenomena may lead to misinterpretation of the true nature of the situation and faulty management.

Theoretically, one might expect that the tourniquet and refrigeration would increase the dangers of postoperative sloughing. Practically, it has been found that the factors of safety in this respect are quite adequate even in the presence of arterial disease. Actual experience with the procedure convinces surgeons, internists, nurses and especially patients that it is a far more conservative and sensible anesthesia than the commonly accepted methods.

Refrigeration offers advantages for nearly all cases of severe wounds of the extremities. Prevention and treatment of shock may be sufficient indication; surgical anesthesia is a valuable by-product. The suffering and blood loss from periodic loosening of an emergency tourniquet can now usually be avoided. Certainly external applications of heat should never be used in conjunction with a tourniquet. Simple measures can and always should be instituted to help cooling whenever a tourniquet is applied. This is especially important in hot environments.

The large scale program of medical education for war which is now in progress should include instruction in temperature physiology and advanced courses in the principles and practice of refrigeration anesthesia. Anesthetists should not cloister themselves in the surgery and devote their lives to the dogma and rituals of the past. These subjects must be made known to all.

2. Allen, Frederick M.: Am. J. Surg. **45**: 459 (Sept.) 1939.
3. Allen, Frederick M., and Grossman, L. W.: Arch. Phys. Therapy **23**: 711 (Dec.) 1942. Dziob, Joseph M., and Brown, Roswell K.: Indust. Med. **12**: 79 (Feb.) 1943.
4. McElvenny, Robert T.: Surg., Gynec. & Obst. **73**: 263 (Aug.) 1941.
5. Brooks, Barney, and Duncan, George W.: Ann. Surg. **114**: 1069 (Dec.) 1941.

Current Comment

WHAT THE PUBLIC KNOWS ABOUT HEALTH

A report of a "quiz corner" study[1] carried out at the New York and San Francisco world fairs gives positive information about the knowledge of the average person regarding health. These quiz corners were placed where visitors to the fairs would pass them in large numbers. The tests were based on two hundred and twenty-three test questions covering cancer, communicable diseases, nutrition, general health information, superstitions and misconceptions, anatomy and physiology, maternal and child health, venereal diseases and tuberculosis. These were divided into five tests of twenty-five questions and two tests of fifty questions each. Some questions that fell in several categories or were repeated with different emphasis were included in more than one test form. The results of this extensive test of approximately a hundred thousand people did not develop anything startlingly new. Certain facts were established which, at least for the newcomer to the field of health education, should save needless and costly blundering. Health knowledge differed little between New York and San Francisco. In both places persons who had traveled farthest to see the fairs made better scores, being presumably somewhat better off economically and having therefore enjoyed better educational opportunities, wider experience or both. A difference in wording affects the response. For example, faced with the statement "Tuberculosis may be inherited" and a true-false choice, 45 per cent at the New York fair and 47 per cent at San Francisco indicated their belief that tuberculosis was inherited. This looks almost like a chance answer. When, however, the same information is called for in a multiple choice type of selection, namely "Which one of the following conditions is inherited? (*a*) tuberculosis, (*b*) color blindness, (*c*) syphilis," only 10 per cent of the New York group and 14 per cent of the San Francisco group chose tuberculosis as the inheritable condition. These were not the same groups of people but they were groups in each instance approximating five thousand, except the San Francisco group of ten thousand, of which 47 per cent indicated that tuberculosis is inherited. Other predictable results were that health workers made the highest scores, while workers in other professions tended to be above the general average. Housewives knew more about nutrition and older people knew more about the problems of older persons, while younger people were more familiar with problems appropriate to their own ages.

1. Derryberry, Mayhew; Weissman, Arthur, and Caswell, George: What the Public Knows About Health, New York, American Museum of Health, 1942.

PHARMACOPEIA ADDS MULTIPLE VITAMIN COMPOUNDS

Shortly after the establishment of the therapeutic importance of vitamins, the United States Pharmacopeia undertook to provide standards and assay methods. At first the action of the Pharmacopeia was confined to individual vitamins; when the U. S. P. XII appeared in 1942 their employment in combinations similar to those found in foods was so thoroughly accepted by medical authorities that the Pharmacopeia found it advisable to provide recognition and standardization for an increasingly large number of these substances. The latest U. S. P. preparations of vitamins, the "Hexavitamin" (six vitamins) Capsules and Tablets, the "Triasyn B" (three synthetic B vitamins with liver) Capsules, Tablets and Injections, have all been approved by authoritative medical groups and were added to the Pharmacopeia at the request of the Office of the Surgeon General of the Army for special use among the troops. These forms of vitamin combinations are commonly sold as "Multiple Vitamins" for the "Hexavitamin type," and as the "B-Complex" for the "Triasyn B type." Neither synthetic pyridoxine hydrochloride nor calcium pantothenate was added to the "B-Complex" type on the recommendation of the National Research Council and the Council on Pharmacy and Chemistry of the American Medical Association, since these compounds have not yet had sufficient clinical study to justify definite therapeutic claims. However, the new "Liver B-Vitamins Concentrate" and "Injection" and "Dried Yeast" and "Dried Yeast Tablets" were introduced to furnish elements of the B complex when these were needed. The U. S. P. Vitamin Advisory Board as now established has the following membership: Dr. C. A. Elvehjem, University of Wisconsin, Madison, Wis.; Dr. C. G. King, scientific director of the Nutritional Foundation, Inc., New York; Dr. E. V. McCollum, Johns Hopkins University, Baltimore; Dr. E. M. Nelson, Vitamin Division, Food and Drug Administration, Washington, D. C., and E. Fullerton Cook, Philadelphia, chairman. The scientific standing of this board gives assurance of careful scientific evaluation.

MUDDY THINKING IN NEW YORK TIMES ABOUT COMMISSIONS FOR WOMEN PHYSICIANS

The peculiar confusion of thought which characterizes practically all editorials in the New York *Times* on medical subjects is especially emphasized in a statement published in that newspaper on April 22 with the title "Women Army Doctors." After announcing the fact that the Congress passed legislation authorizing the commissioning of women physicians in the Army and Navy medical departments for the period of the emergency, the editorial says: "There are at least 5,000 and possibly as many as 7,000 women physicians. Permit them to practice in base hospitals—all that the bill sanctions—and the drain on the country's medical resources would be less than it is." Since the country's medical resources consist of all the physicians that we have, and since the physicians are needed in the armed forces, industry and civilian life, and since the conditions are just about equally critical in all three fields, just how is the drain reduced by moving women doctors who are practicing in civilian life into the Army? Obviously, removal of a woman from civilian practice merely creates another area in civilian life for which a physician has to be found. The confusion here illustrated is simply a matter of logic. When it comes to any consideration of the practice of medicine, the failure of the New York *Times* to secure information from authoritative, qualified sources is even more obvious.

COBRA VENOM FOR PAIN OF ARTHRITIS

Talkov and Bauer[1] report the results of daily intramuscular injections of cobra venom to 12 selected patients with rheumatoid arthritis. Three of the 12 patients experienced subjective relief estimated variably from 25 to 75 per cent. Improvement was not complete, dramatic or lasting in any case. Objective alterations were not detected. The only significant toxic effect was local reaction at the site of injection in 1 patient. The observed effects with large doses of cobra venom for control of pain in rheumatoid arthritis hence were disappointing and contrary to previous reports. These Boston investigators conclude that cobra venom is without value for the relief of pain associated with rheumatoid arthritis.

"B_1 VITAMIN HYPOIMMUNITY"

In THE JOURNAL for April 17, page 1284, appeared a report of recent research by Foster, Jones, Henle and Dorfman, an account of which was published in the *Proceedings of the Society for Experimental Biology and Medicine* for November 1942, which seemed to indicate that excessive doses of thiamine might seriously lower susceptibility to the virus of poliomyelitis. Dr. Joseph Stokes Jr., in whose department the work was carried on, now informs us that the brevity of the presentation on which the original editorial in THE JOURNAL was based no doubt led to some misinterpretations of the facts presented. Adequate data ruled out the specificity of thiamine in this connection. Thus later results show not only that the mice on a vitamin B_1 deficient diet have increased resistance over a period of thirty days to the Lansing strain of murine poliomyelitis virus but also that simple restriction of food intake will produce comparable results. However, increase of the concentration of thiamine in the diet so that the amount consumed by the animals on the restricted intake was at least double that of the animals on the unrestricted intake did not increase the incidence of paralysis or death. From the data it appears that restriction of the intake of either the complete ration or just the carbohydrate will delay the manifestation in mice of infection with the Lansing strain of poliomyelitis virus. The interpretation originally made is not warranted in the light of the complete evidence.

1. Talkov, R. H., and Bauer, Walter: The Failure of Cobra Venom to Relieve Pain in Rheumatoid Arthritis, New England J. Med. **228:** 152 (Feb. 4) 1943.

MEDICINE AND THE WAR

In this section of The Journal each week will appear official notices by the Committee on War Participation of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medicine and the war and such other information and announcements as will be useful to the medical profession.

ARMY

SOLDIERS TO HAVE FREE LEGAL AID

Heretofore a soldier who needed legal advice went to his company commander, the post chaplain, or the Red Cross representative. Under a new plan sponsored by the War Department and the American Bar Association, a commissioned officer who is also a licensed attorney is appointed the legal assistance officer at each post, camp or station. The legal assistance officer will have the cooperation and help of volunteer civilian lawyers from nearby communities who have been chosen by the state bar association committee on war work for that purpose. The only barriers put on the aid offered is that the legal assistance officer may not collect debts, advise or assist military personnel who are or might be subject to court-martial investigation or charges, and he may not appear before civil courts, boards or commissions as attorney for the soldier or officer. All talks and dealings between military personnel and the legal assistance officer will be considered strictly confidential and personal. No superior officer may order disclosure of any information confided to the legal assistance officer. Free legal aid for all military and civilian personnel of Carlisle Barracks is now guaranteed under a recent War Department order authorizing the appointment of a legal assistance officer there. Capt. Henry E. White, post judge advocate, has been given this additional duty.

LAST OFFICER CANDIDATE CLASS AT CARLISLE BARRACKS

Two hundred and twenty enlisted men of the medical department became commissioned officers after graduating in the last officer candidate class at the Medical Field Service School, Carlisle Barracks, Pa., February 27. This made a total of 2,809 medical administrative officers who have been commissioned at Carlisle Barracks and sent to units to take over administrative work, thereby relieving medical and dental officers for duties requiring professional skill. In the future all medical administrative officer training will be conducted at Camp Barkeley, Texas, where the medical administrative school, opened about a year ago, graduates a thousand officer candidates each month. The closure of the officer candidate school at Carlisle Barracks was brought about by the need to increase the number of medical and dental officers in training for field duty at that station. Twenty-seven states and the District of Columbia were represented in the last class.

THE CITATION ACCOMPANYING GENERAL KENNER'S AWARD

THE JOURNAL on January 16, page 199, noted the award of the Distinguished Service Medal to Brig. Gen. Albert W. Kenner of the U. S. Army Medical Corps for distinguished service overseas. The War Department on April 7 made available the citation accompanying General Kenner's award. The citation read as follows: "Brigadier General Albert W. Kenner (then Colonel) United States Army. For exceptionally meritorious service in a position of great responsibility. General (then Colonel) Kenner organized the medical service of a Task Force, accompanied that Force in the landings in French Morocco, and directed the operation of the medical service during the combat phases of the operation. When existing facilities at French Morocco were inadequate to care for the number of wounded men, he obtained shelter and medical supplies and personnel to care for them. He personally supervised their care and as a result of his efforts only 2 out of 400 patients died."

THE DESHON GENERAL HOSPITAL

The U. S. Army Deshon General Hospital at Butler, Pa., was dedicated on March 26 in the presence of many guests from Washington, Baltimore, Harrisburg and other cities. Brig. Gen. Larry B. McAfee, assistant to the Surgeon General, gave an address entitled "The Life of George Durfee Deshon, Lieutenant Colonel, Medical Corps." Lieutenant Colonel Deshon, a native of Massachusetts, entered West Point from Dartmouth College and graduated in the class of 1886, of which Gen. John J. Pershing was a member. While stationed at Fort Wayne he began the study of medicine at Detroit Medical College. He resigned from the Army in 1890 and entered Bellevue Medical College, New York, for his senior year, then reentered the Army as an assistant surgeon in 1892. Lieutenant Colonel Deshon is to be remembered especially for the part he played in the reorganization of the Medical Department in 1908 and for the planning and construction of Gorgas Hospital in the Panama Canal Zone.

The General Hospital which was named in honor of Lieutenant Colonel Deshon occupies the buildings formerly known as the Western Pennsylvania State Sanatorium for Tuberculosis. These buildings, erected in 1938 but never occupied, were taken over by the War Department and the hospital was activated on Oct. 26, 1942.

The remodeling of the buildings and the construction of new wards, mess halls, officers' and nurses' quarters and barracks, and of other buildings sufficient to enlarge the capacity to more than 1,000 beds was undertaken by army engineers. The new wards and barracks will be ready for occupancy within a short time.

The medical officers at present on duty at the hospital are:

COLONEL

Gentzkow, Cleon J., commanding officer.

MAJORS

Arack, George, executive officer.
Bettison, William L., chief of officers' section.
Bizzozero, Orpheus J., chief, general medical section.
Bovik, Leslie E., chief, surgical service.
Davis, Perk L., chief, medical service.
Farrow, Reginald C., chief, orthopedic section.
Governale, Vincent J., chief, x-ray service.
Smith, Arthur M., Jr., assistant chief, surgical service.
Stuart, Carroll W., chief, maxillofacial surgical section.
Uhler, Claude, chief, neuropsychiatric section.

CAPTAINS

Beck, Frederick W., assistant chief, eye, ear, nose and throat section.
Burnett, George W., chief, contagious disease section.
Drenckhahn, Charles H., chief, gastroenterology section.
Edwards, Jesse E., chief, laboratory service.
Ellis, Sydney, chief, anesthesiology section.
Epstein, Joseph N., station surgeon and admitting officer.
Gaines, Reuben B., chief, urology section.
Nichol, Arthur D., assistant chief, medical service.
Sawicky, Herman H., dermatologist and hospital inspector.
Schnebly, John T., chief, eye, ear, nose and throat section.
Tsaloff, Nicholas M., registrar.
Wadsworth, George H., chief, general surgical section.

FIRST LIEUTENANTS

Balsamo, Nicholas J., surgical ward officer.
Conrad, Joseph W., medical ward officer.
Davies, Baxter T., medical ward officer.
Smith, Robert B., medical ward officer.
Van Hale, Laurence A., surgical ward officer.

CIVILIAN DEFENSE

CIVILIAN PHYSICIANS IN OCD-U. S. P. H. S. AFFILIATED UNITS TO GIVE ARMY TEMPORARY LOCAL ASSISTANCE IN MILITARY EMERGENCIES

Affiliated hospital units of physicians are being organized by selected hospitals and medical schools at the invitation of the Office of Civilian Defense and the U. S. Public Health Service to provide balanced medical staffs for emergency base hospitals in the coastal states. Emergency base hospitals are institutions in relatively safe areas to which casualties and other hospital patients may be transferred from casualty receiving hospitals in target cities under enemy attack. Members of the affiliated units receive inactive commissions as reserve officers in the Public Health Service and will be called to active duty by the Surgeon General only on the recommendation of the chief medical officer of the Office of Civilian Defense.

The affiliated hospital units will also be prepared to assist the Army in the event of an extraordinary military necessity in or near the localities in which these physicians reside, the Medical Division of the Office of Civilian Defense announces. This arrangement will relieve the Army of the necessity for organizing its own special groups of civilian physicians for local emergencies and will help to conserve the dwindling supply of physicians for the civilian population. Unit members have willingly accepted this new responsibility, according to reports from OCD regional medical officers.

For the purpose of giving such temporary assistance to the Army, a unit will be activated on the advice of the state chief of Emergency Medical Service and will be relieved from active service as soon as the Surgeon General of the Army can handle the emergency by the assignment of army medical officers, the OCD pointed out. Nurses are being appointed in the Public Health Service so that they may be available for similar temporary duty in serious military emergencies. Nurses on such duty will be relieved as promptly as possible by the assignment of Army nurses. Army authorities will make all requests for medical and nursing assistance through OCD regional medical officers or through state chiefs of Emergency Medical Service who may have been designated as representatives of the regional medical officers.

The Board of Trustees of the American Medical Association at its meeting of Sept. 17-18, 1942 approved the formation of the affiliated hospital units. On March 20 the directing board of the Procurement and Assignment Service of the War Manpower Commission also gave full approval to the formation of the units to provide medical care for civilian casualties and other hospital patients who must be moved out of their communities of residence because of enemy action and to provide temporary care in extreme emergencies for military personnel in extemporized hospitals. The directing board pointed out that this arrangement safeguards civilian medical needs against haphazard withdrawal of physicians in an emergency.

The resolution adopted by the board urged state chairmen of the Procurement and Assignment Service to give every possible assistance to the organization of the units. It emphasized that applications for commissions will be accepted only from physicians 45 years of age or over, women physicians, physicians of any age who are physically disqualified for military duty and physicians already declared by the Procurement and Assignment Service to be essential for civilian needs.

Initially, only hospitals and medical schools in areas considered to be in most immediate danger of enemy attack were invited to establish units. The Army's request has now made it necessary to have similar groups in the interior regions to augment military personnel temporarily in the event of an extraordinary influx of military casualties. A few institutions in interior states have already been invited, but the entire list for these states has not been completed.

Because the units are to be used only in their areas of residence, the OCD and the Public Health Service have invited 191 hospitals and medical schools in various parts of the country to form affiliated units from their staffs. Up to April 19, unit directors had been nominated by 152 of these institutions and 104 had been cleared for commissions. In addition, applications had been received from 397 members of units. A unit consists of 15 members, including a chief and assistant chief of medical services, 2 general internists, a chief and assistant chief of surgical services, 4 general surgeons, 2 orthopedic surgeons, 1 dental surgeon, 1 pathologist and 1 radiologist.

First in the country to complete a unit was Albany Hospital, Albany, N. Y. Other institutions which on April 15 had substantially completed the membership of their units were:

Newark Beth Israel Hospital, Newark, N. J.
St. Paul's Hospital, Dallas, Texas.
Norwood Hospital, Birmingham, Ala.
Columbia Hospital, Columbia, S. C.
Baylor Hospital, Dallas, Texas.
James M. Jackson Memorial Hospital, Miami, Fla.
Stanford University Medical School, San Francisco.
Huntington Memorial Hospital, Pasadena, Calif.
San Joaquin County General Hospital, French Camp, San Joaquin County, Calif.
Syracuse University College of Medicine, Syracuse, N. Y.
Jewish Hospital of Brooklyn.
Eastern Maine General Hospital, Bangor, Maine.
Methodist Hospital, Dallas, Texas.
Lynchburg General Hospital, Lynchburg, Va.
Springfield Hospital, Springfield, Mass.
Maine General Hospital, Portland, Maine.
Central Maine General Hospital, Lewiston, Maine.
Newark City Hospital, Newark, N. J.
Atlantic City Hospital, Atlantic City, N. J.
City-County Hospital, El Paso, Texas.
University of California Medical School, San Francisco.

In the following institutions the organization is practically complete:

FIRST CIVILIAN DEFENSE REGION

Eastern Maine General Hospital, Bangor.
Central Maine General Hospital, Lewiston.
Maine General Hospital, Portland.
Springfield Hospital, Springfield, Mass.

SECOND REGION

Jewish Hospital, Brooklyn.
Albany Medical College, Albany, N. Y.
Syracuse University College of Medicine, Syracuse, N. Y.
Newark City Hospital, Newark, N. J.
Newark Beth Israel Hospital, Newark, N. J.
Atlantic City Hospital, Atlantic City, N. J.

THIRD REGION

Lynchburg General Hospital, Lynchburg, Va.

FOURTH REGION

James M. Jackson Memorial Hospital, Miami, Fla.
Columbia Hospital, Columbia, S. C.
Norwood Hospital, Birmingham, Ala.

EIGHTH REGION

Baylor University College of Medicine, Dallas, Texas.
St. Paul's Hospital, Dallas.
Methodist Hospital, Dallas.
City-County Hospital, El Paso, Texas.

NINTH REGION

Collis P. & Howard Huntington Memorial Hospital, Pasadena, Calif.
University of California School of Medicine, San Francisco.
Stanford University School of Medicine, San Francisco.
San Joaquin General Hospital, French Camp, San Joaquin County, Calif.

Many additional institutions have in process the organization of such units. These will be announced as arrangements are completed.

DR. PAUL W. DAVIS REPORTED MISSING

According to the Peoria *Star*, Dr. Paul Wilson Davis of Jennings, a suburb of St. Louis, and a first lieutenant in the Civil Air Patrol, has been missing since February 26, when he took off in a plane with an observer and with other planes as escorts to a convoy along the Atlantic coast. The planes became separated while patrolling. Lieutenant Davis radioed a distress message, but the other fliers and the Coast Guard after searching the area were unable to find any trace of the plane and its occupants. It is said that Mrs. Davis, the wife, and the young son in St. Louis were notified from Washington. Dr. Davis entered the Civil Air Patrol last September. He was serving both as a pilot and as base physician. He was born in Chicago in 1912, later lived in Peoria and graduated in medicine at St. Louis University School of Medicine in 1939. He had an internship at King County Hospital, Seattle, and a residency at Methodist Hospital in Peoria. He was in practice in Jennings before joining the Civil Air Patrol.

MISCELLANEOUS

WARTIME GRADUATE MEDICAL MEETINGS

Under the auspices of the American Medical Association, the American College of Physicians and the American College of Surgeons a series of Wartime Graduate Medical Meetings is in process of organization. These meetings are authorized, as far as they concern the armed forces, by the Surgeon Generals of the Army, Navy and Public Health Service. The organizations concerned have appointed a committee of three men—one from each organization—to proceed with the work of administration. This committee includes Dr. Edward L. Bortz (chairman, 4200 Pine Street, Philadelphia), Dr. William B. Breed (secretary-treasurer) and Dr. Alfred Blalock.

The Plan

For organizational purposes, the country has been divided into twenty-four sections and key committees of three men appointed in each section to carry on the details of the program. Likewise, to insure a most worthwhile program a group of qualified authorities has been designated to serve as national consultants in the various special fields.

The duties of the section committees are:

1. To be responsible for the details of programs at each service hospital in their respective regions, where programs are to be conducted.
2. To be responsible for the selection of teachers and speakers, with the assistance of the central committee and of the national consultants.
3. To arrange time of meetings and schedules of travel and appearance of the teachers within their respective territories.
4. To furnish copies of the programs to the commanding medical officers of the hospitals (programs shall be mimeographed or otherwise reproduced by the hospitals themselves).
5. Supervision of expenses, which shall be limited to necessary travel costs; also the forwarding of statements of these to the secretary of the central committee, Dr. William B. Breed.
6. To obtain from the commanding officers at the end of the period of instruction a written statement concerning their impressions, and those of their staff, regarding the value of the courses, and suggestions for improvement.

The duties of the consultants are:

1. Each consultant to prepare a specimen six hour teaching schedule for a one day period.
2. To cooperate with the regional committees in working out local programs and securing the teachers.

When the teaching schedules have been prepared by the consultants and lecturers have assembled, the programs will be submitted to the Surgeon Generals of the Army, Navy and Public Health Services and the commanding officers of the various army corps commands and naval districts. When the desire for courses is indicated, the details will be arranged through the local committee with the assistance of the key schedules and the appointment of speakers.

In states where postgraduate activities are already being extended in the direction of service hospitals, it will be the policy of the Committee for Wartime Graduate Medical Meetings to turn over requests that may come to it to the group which is already functioning. Furthermore, it desires to cooperate in every way possible with committees of local or state medical societies.

The teaching schedule will include ward walks, clinics, practical demonstrations, moving pictures, lectures and conferences offered to medical installations throughout the entire nation.

In carrying out the plans of the committee, no single pattern can be strictly followed. However, suggested methods of approach are herewith listed:

(*a*) Meetings such as those already held in Boston, Philadelphia and Chicago, where lecturers addressed groups in various camps on successive nights, or a one day meeting at a central point with several outstanding speakers embracing topics of vital interest.

(*b*) The organization of teams which may arrange to visit one or more camps in nearby areas to put on a one day and evening program. Such teams may appear at two or three adjacent camps on successive days.

(*c*) In areas where five or six service hospitals are within reasonable distance from a central distributing center, a complete six day postgraduate program may be offered on the following basis:

The organization of six teams of two or more authorities each, from different medical specialties, to appear at the five or six hospitals in that area, each team on one particular day for five or six consecutive weeks. The program may include teaching ward rounds and laboratory demonstrations for small groups in the morning hours. Motion picture exhibits and one lecture with a question and answer period may be presented in the afternoon and a further lecture, seminar or round table conference in the evening.

It is evident that any of the foregoing plans, all of which are tentative and illustrative only, might have to be modified to meet local conditions. However, teams of teachers should be available in the various medical concentration areas throughout the country to conduct full courses of instruction where needed. Also it may be expedient at occasional intervals to repeat this circular or peripatetic plan two or even three times a year, depending on the change of medical personnel in the service hospitals.

It is the desire of the organizations in charge to extend to the doctors in the armed services the best facilities of American medicine in the interest of our fighting men.

Committee for Wartime Graduate Medical Meetings

BOARD OF NATIONAL CONSULTANTS

1. Anesthesia—John S. Lundy, 102 Second Avenue S.W., Rochester, Minn.
2. Aviation Medicine—Lieut. Col. W. Paul Holbrook, M. C., U. S. Army Air Surgeon's Office, Headquarters, Army Air Force, Washington, D. C.
3. Cardiovascular Problems—William D. Stroud, 1011 Clinton Street, Philadelphia.
4. Chemotherapy—Chester S. Keefer, 65 East Newton Street, Boston.
5. Dermatology—
6. Dysenteries—Lieut. Col. Thomas T. Mackie, M. C., U. S. Army, 6817 Georgia Avenue N.W., Washington, D. C.
7. Epidemiology and Laboratory Medicine—Roy R. Kracke, 441 Clairmont Avenue, Decatur, Ga.
8. Gastrointestinal Diseases—Walter L. Palmer, 950 East 59th Street, Chicago.
9. General Internal Medicine—David P. Barr, 525 East 68th Street, New York.
10. General Surgery—Irvin Abell, 321 West Broadway, Louisville, Ky.
11. Malaria—Henry E. Meleney, 477 First Avenue, New York.
12. Neurology and Neurosurgery—Tracy J. Putnam, 710 West 168th Street, New York.
13. Nutrition—John B. Youmans, Vanderbilt University Hospital, Nashville, Tenn.
14. Orthopedic Surgery—George E. Bennett, 4 East Madison Street, Baltimore.
15. Physical Therapy—Frank H. Krusen, 102 Second Avenue S.W., Rochester, Minn.
16. Plastic and Maxillofacial Surgery—Robert H. Ivy, 1930 Chestnut Street, Philadelphia.
17. Psychiatry—Arthur H. Ruggles, 305 Blackstone Blvd., Providence, R. I.
18. Psychosomatic Medicine—John Romano, Cincinnati General Hospital, Cincinnati.
19. Radiology—Byrl Kirklin, 102 Second Avenue S.W., Rochester, Minn.
20. Respiratory Diseases—Francis G. Blake, 789 Howard Avenue, New Haven, Conn.
21. Rheumatism and Arthritis—Ralph Pemberton, 2031 Locust Street, Philadelphia.
22. Shock, Burns and Plasma—Lieut. Col. Douglas B. Kendrick Jr., M. C., U. S. Army, Army Medical Center, Washington, D. C.
23. Shock, Burns and Plasma—Commander Lloyd D. Newhouser (MC) U.S.N., Naval Medical School, Bethesda, Md.
24. Thoracic Surgery—Leo Eloesser, 490 Post Street, San Francisco.
25. Traumatic Surgery of the Abdomen—Frederick A. Coller, 1313 East Ann Street, Ann Arbor, Mich.
26. Tuberculosis—Lieut. Col. Esmond R. Long, M. C., U. S. Army, Army Service Forces, Office of the Surgeon General, War Department, Washington, D. C.
27. Urology—Herman L. Kretschmer, 122 South Michigan Avenue, Chicago.
28. Venereal Diseases—Raymond A. Vonderlehr, U. S. Public Health Service, Washington, D. C.

U. S. PUBLIC HEALTH SERVICE FEATURED IN R. K. O. "THIS IS AMERICA" FILM

Dr. Carl E. Rice, currently in charge of the Community Medical and Dental Section of the U. S. Public Health Service at Bethesda, Md., is featured in R. K. O.'s "Medicine On Guard," which tells the story of the typical wartime community faced by urgent health problems arising from the shortage of doctors. Dr. Rice works in close cooperation with the Procurement and Assignment Service of the War Manpower Commission and, when appealed to by the harassed local physician, arranges the relocation of a doctor from a less critical area. This latest "This Is America" two reel feature depicts the rising incidence of tuberculosis in a typical industrial community and again it is the U. S. Public Health Service that comes to the rescue. Under the direction of Dr. Herman E. Hilleboe this menace is being checked through the use of the mobile photofluorographic units, which are set up in the factories themselves and take mass chest plates of the workers with a minimum of time loss and expense. The elaborate laboratories of the Bureau of Industrial Hygiene under the direction of Dr. James G. Townsend are shown determining the causes of occupational disabilities and thus keeping the industrial health of America at its usual high level. These aspects of the U. S. Public Health Service's home front battle against sickness and disease are illuminatingly and entertainingly filmed in "Medicine On Guard," which tells the story of a typical American community faced by these problems.

HEALTH OF THE NETHERLANDS UNDER HITLER

Constant friction between Dutch doctors and the Nazis, coupled with grave wartime shortages, are undermining the Dutch private and public health services, and the disease index of the occupied country has become alarming. Many persons have become so weak from wartime hardships that a slight ailment, even a common cold, may prove fatal. Medicines are either scarce or unobtainable. The harsh Nazi imposed working hours, the lack of fuel to warm homes and hospitals, and the wholesale conscription of Dutch nurses to aid the Germans on the fighting fronts have contributed to the complications in the Dutch medical-social sphere.

Lack of proper diet and overwork are breaking down the health of the Dutch people, a Dutch physician reported on his arrival in London in February. He declared that industrial fatigue had become so serious that work today required twice as many men as previously. The Dutch are living on food which gives them only about 1,500 calories a day, half the amount required from a normal diet. Reports reaching London on February 15 said that the Nazi authorities had decided to oust old people "whose recovery is doubtful" from hospitals to ease crowded conditions resulting from the increasing disease toll. Officials disclosed that more than 2,000 "serious cases" were waiting for hospital beds in Amsterdam alone. Diphtheria cases by December had reached 12,223, compared to 5,437 in 1941 and 1,273 in 1939. Dispatches in August of last year said that the tuberculosis mortality rate had increased between 39 and 44 per cent under German occupation and the death rate of newborn babies had become alarming.

Efforts of the Dutch Nazis to control the Netherlands Medical Society led to its dissolution early last year. All members received a letter urging them to resign and warning them of twelve objectives the Nazis hoped to attain. Ninety per cent of the members resigned and the board was dissolved. As an outcome of this dissolution and further German action, the Nazi Medical Front and the Netherlands Medical Chamber, headed respectively by the pro-Nazi physicians Keyer and C. C. A. Croin, virtually control all medical activities in the Netherlands today.

According to Dutch underground press reports received in London, Netherlands practitioners have refused membership in the Nazi Physicians Chamber on the ground that its governing principles are in conflict with their traditional ethics. The Nazi policy demands that doctors diminish the chances of life of the mentally afflicted or even kill them. The underground press stressed that Dutch doctors will continue to say no to all requests for collaboration with Nazi physicians.

The opposition has reached such scope that some Dutch doctors aid Netherlanders in avoiding the compulsory conscription of labor for Germany, according to an article in *De Storm*, organ of the Dutch Nazi Storm Troops, which said that physicians were rejecting "healthy persons" as unfit and at the same time were giving certificates of health to "half dying persons" who must be hospitalized as soon as they reach the reich.

The war and occupation have dealt hard blows to what was one of the most advanced medical and public health organizations in the world. State subsidized hospitals with the most modern equipment were in operation throughout the country. The Central Institute for Brain Research at Amsterdam and the clinics at the Universities of Utrecht, Leyden, Amsterdam and Groningen had an international repute which lured foreign specialists and students to the Netherlands. Today the doctors, nurses and medical students of the Netherlands are suffering from the same repression that throttles their compatriots. In the view of well informed observers the situation undoubtedly will grow worse steadily as long as the Nazis are in power.

PUBLIC HEALTH UNDER HITLER

According to NDZ of February 3, private health insurance in Germany covers nearly 10 million insured persons. In view of its growing importance, it is considered necessary that this branch of insurance should be controlled by specific regulations. The Committee for Insurance Law of the Academy for German Law has therefore submitted to the competent authorities regulations designed to fill this gap. A report says that health insurance should come under personal insurance and not under insurance against damage. Its main object is to compensate the insured for any expenditure on medical treatment. In addition, fixed benefits such as payments to dependents in case of death and maternity benefits are granted. The draft suggests that insurance companies should give full details of these benefits in their policies and tariffs.

Reichs-Gesundheitsblatt, Berlin, of January 20 gave the following figures for the incidence of infectious diseases in Germany during 1942, compared with 1941:

	1942	1941
Diphtheria	274,459	200,750
Scarlet fever	396,527	274,508
Tuberculosis (lung, throat)	125,794	116,302
Tuberculosis (skin)	1,818	1,896
Tuberculosis (other organs)	16,847	15,367
Meningitis cerebrospinalis	2,732	4,722
Encephalitis epidemica	419	652
Infantile paralysis	3,911	.....
Trachoma	8,514	8,161
Typhoid (typhus abdominalis)	16,015	7,630
Paratyphoid	5,916	4,855
Dysentery	15,070	10,278
Bacterial food poisoning	1,930	2,252
Icterus infectiosus	103	90
Malaria	709	1,606

Nya Dagligt Allehanda, Stockholm, of February 4 reported that Norwegian hospitals are crowded out, partly because of the ruthless German requisitioning, partly because of increasing illness. It is reported from Oslo that skin diseases especially show an alarming increase. Syphilis, which was previously rare in Norway, is now not a phenomenon. Prostitution is widespread. Diphtheria epidemics are raging in several places, especially in Opland districts. Hospital conditions in Opland are beneath criticism. Most hospitals in the county have been requisitioned by the Germans, who force sick Norwegians to be treated in schools, meeting halls and the like under conditions which would have been rejected a hundred years ago.

Trots Allt! of February 12 quoted a circular by Himmler concerning the transport of prisoners of war saying that, since in spite of previous remonstrations prisoners are still arriving at their destination covered with lice, a thorough and careful delousing is ordered in order to avoid the danger of infection and spreading of spotted typhus. Himmler also prohibits the transport of seriously ill persons together with others, and sick prisoners must in future be medically examined. The paper comments that the regulations have not been issued out of humane consideration for the prisoners but in order to protect the Germans and because of the fear of infection.

ORGANIZATION SECTION

OFFICIAL NOTES

DOCTORS AT WAR

Radio broadcasts of Doctors at War by the American Medical Association in cooperation with the National Broadcasting Company and the Medical Department of the United States Army and the United States Navy are on the air each Saturday at 5 p. m. Eastern War Time (4 p. m. Central War Time, 3 p. m. Mountain War Time, 2 p. m. Pacific War Time). An exception is the Chicago area, where the broadcasts are heard by transcription at 10:30 p. m. Saturdays over Station WMAQ. Unless otherwise indicated, each program is summarized by Dr. W. W. Bauer, Director, Bureau of Health Education.

The titles and guest speakers for the next four programs are as follows:

May 8. "Drugs March to War."
Speaker, Dr. Austin E. Smith, Secretary, Council on Pharmacy and Chemistry.

May 15. "High Air."

May 22. "Flash Burns."
Speaker, Rear Admiral Ross T. McIntire, M. C., Surgeon General, United States Navy.

May 29. "Sick Call."

BEFORE THE DOCTOR COMES

The American Medical Association program on Radio Station WLS (890 kilocycles) entitled "Before the Doctor Comes" will be on the air every Thursday morning at 9:45 up to and including May 27. Mrs. June Merrill will interview Dr. W. W. Bauer, Director, Bureau of Health Education, or Dr. Austin E. Smith, Secretary, Council on Pharmacy and Chemistry, on common home health problems. The titles for the next four programs are:

May 6. "Foreign Bodies in the Nose, Ears, Throat or Eyes." (Smith.)
May 13. "Growing Pains." (Bauer.)
May 20. "Nervous Habits." (Bauer.)
May 27. "Immunization." (Bauer.)

MEDICAL LEGISLATION

MEDICAL BILLS IN CONGRESS

Change in Status.—H. R. 1936 has passed the Senate, authorizing an appropriation of $2,000,000 to expand the facilities for hospitalization of dependents of Navy and Marine Corps personnel and of certain persons outside the continental limits of the United States.

Bills Introduced.—The President has submitted to Congress an estimate of appropriation for the Office of Defense Health and Welfare Services of the Office for Emergency Management for the fiscal year 1944, amounting to $2,053,000. H. Res. 220, submitted by Representative Bonner, North Carolina, proposes to authorize the House Committee on Invalid Pensions to investigate the progress of the program of the Federal Board of Hospitalization to determine if such program is being carried forward efficiently and expeditiously so as to meet hospitalization problems that are likely to arise out of the present global war. H. R. 2548, introduced by Representative Patman, Texas, proposes to establish a Civilian Supply Administration with authority, among other things, to ascertain the quantities and types of goods and services, including but not limited to food, clothing, shelter, fuel, transportation and medical care, necessary to keep the civilian population healthy and functioning effectively. H. R. 2567, introduced by Representative Voorhis, California, proposes to establish a Temporary National Hospital Survey, to be composed of two members of the Senate, two members of the House, one representative each from the Department of War, the Department of the Navy, the United States Public Health Service and the Veterans' Administration, and four additional members appointed by the President. This survey, it is contemplated, will make a full investigation with respect to the situation of hospitals and hospital beds now available or that can be made available for use by members of the military forces, a study of all buildings of any kind or character which are or may be adapted for hospitalization, including hotels, spas, dude ranches, health resorts and national park establishments, and to study the hospital and health problems as a whole both as to war and as to the effect on civilian life of the various phases of the war.

STATE MEDICAL LEGISLATION

Connecticut

Bills Introduced.—Substitute for S. 259, to amend the law relating to the practice of natureopathy, proposes to authorize the granting of certificates without examination to persons who have been in active and continuous practice of natureopathy for three years immediately preceding the date of his application, provided that a person who applies for such certificate after his discharge from the armed forces of the United States must show that he had engaged in the practice of natureopathy for three years immediately preceding the date of his induction into such armed forces. S. 804, to amend the chiropractic law, proposes to eliminate the requirement of professional study for a period of four years of thirty-six weeks each and to substitute therefor the requirement that such course consist of four years of eight months each, totaling not less than three thousand six hundred hours.

Florida

Bills Introduced.—S. 139 proposes to require any physician or other person who makes a diagnosis in, or treats a case of, venereal disease to make a report thereof to the state board of health or to the local health officer and to make a further report in the event that such person ceases reporting to the physician prior to his having become cured or rendered noninfectious. S. 141 proposes to require all persons rejected or deferred for military service who are infected with venereal disease to report to venereal disease clinics operated by the state board of health and take treatment from a private physician or at public expense for such venereal disease. H. 37 proposes that each person applying for a marriage license must present a certificate signed by a qualified physician licensed to practice medicine and surgery in any state or United States territory certifying that the applicant is not infected with syphilis in a communicable stage. H. 110 proposes that every person applying for a license to marry shall present a certificate from a duly licensed physician certifying that he or she is not infected with syphilis in a communicable stage. H. 111 proposes that every physician attending a pregnant woman shall take, or cause

to be taken, a sample of blood of such woman at the time of the first professional visit and submit such blood to an approved laboratory for a standard serologic test for syphilis. The person taking the sample must be a physician duly licensed to practice medicine. H. 146 proposes that no person duly authorized to practice medicine and surgery shall be allowed to disclose any communication or information which he may have acquired in his professional capacity from any patient, except with the written consent of such patient or his legal representative. H. 246 proposes that no person shall maintain or operate a maternity hospital without first obtaining a license therefor from the state board of health and defines a maternity hospital as a place which receives women for care or treatment during pregnancy or during delivery or within ten days after delivery.

Illinois

Bills Introduced.—S. 307 proposes the creation in the department of registration of an electrolysis committee for the purpose of examining persons desiring to practice electrolysis, defined as the removal of superfluous hair by means and use of an electrically charged needle. H. 425 proposes to authorize the department of public health to establish, equip and maintain stations or distribution centers for breast milk for infants, to cooperate with hospitals in the collection, storage and distribution of such milk and to provide regulations necessary to safeguard the collection, storage and sale of such milk. H. 437 proposes the enactment of an Illinois food, drug and cosmetic act.

Iowa

Bill Enacted.—S. 371 was approved, April 15. To amend S. 82, concerning the income tax law, which was approved by the governor on March 11, 1943, S. 371 provides that a taxpayer may deduct expenses paid during the taxable year, not compensated for by insurance or otherwise, for medical care of himself, his spouse or any dependent. The term "medical care" is defined to include amounts paid for the diagnosis, cure, mitigation, treatment or prevention of disease or for the purpose of affecting any structure or function of the body, and also treatment or nursing as prescribed by a well recognized church or religious denomination in any hospital or at home or in a sanatorium conducted and operated by such church or denomination.

Massachusetts

Bill Introduced.—H. 1519 proposes that hospital records shall be admissible as evidence in a court so far as they relate to the treatment and medical history of a case and authorizes a court to admit photographic or microphotographic copies thereof.

Michigan

Bills Enacted.—H. 277 has become Public Act. No. 204 of the Acts of 1943. It, among other things, prohibits druggists and pharmacists from selling barbituric acid and any of its derivatives, chloral hydrate or paraldehyde, except on prescription of a licensed physician, dentist or veterinarian. H. 343 has become Public Act No. 205 of the Acts of 1943. It prohibits a minor from purchasing, and a person from selling to a minor, any alcoholic beverage except pursuant to a prescription of a duly licensed physician.

Missouri

Bill Introduced.—H. 590, to amend the osteopathic practice act, proposes among other things to define osteopathy as the system, method, art or science of treating diseases, injuries or defects of the human body as taught and practiced by reputable colleges of osteopathy and surgery in the state, which practice shall include, without limiting the generality of the foregoing, operative surgery with instruments, obstetrics and the use of anesthetics, antiseptics, narcotics, biologics, antidotes, stimulants, serums and vaccines.

Bill Enacted.—H. 45 was approved, April 13. Amending the law relating to marriage, it requires every person applying for a license to marry to furnish a report of a negative laboratory serologic test for syphilis and an affidavit signed by him or herself that he or she is free from such disease. If the laboratory test is positive, the applicant must present a certificate from a physician licensed to practice in the state of Missouri certifying that the applicant is not infected with syphilis in a communicable stage.

Nebraska

Bill Introduced.—Legislative Bill No. 139, amending the law relating to the practice of medicine and surgery, was amended by proposing that any person now licensed to practice osteopathy in the state of Nebraska may, if application is made prior to July 1, 1948, take the regular examination given before the Board of Examiners in Medicine and Surgery, and, if successful, he shall receive a license to practice medicine and surgery in the state of Nebraska; provided, however, that any doctor of osteopathy now licensed and practicing in the state of Nebraska who is able to show satisfactory evidence of having taken and successfully passed the regular examination in medicine and surgery shall be issued a license hereunder on payment of the prescribed fee.

New Mexico

Bills Enacted.—S. 101 has become chapter 50 of the Laws of 1943. It requires the county school superintendent to see that all children in his county under 8 years of age are immunized against diphtheria. S. 160 has become chapter 78 of the Laws of 1943. It provides that any person having a license to practice a profession in the state shall not be prejudiced by reason of having been drafted into the armed services but shall retain such license after release from such service. H. 219 has become chapter 33 of the Laws of 1943. It amends the law relating to school employees by prohibiting the employment of teachers afflicted with syphilis and requiring all school employees to present annually a certificate from a licensed physician showing freedom from any transmissible disease, including tuberculosis and Wassermann tests.

Pennsylvania

Bills Introduced.—S. 526 proposes that a woman who is reasonably suspected of being afflicted with syphilis, gonorrhea or other venereal disease in a communicable stage and who is reasonably suspected of being, because of her habits, a carrier of such disease and a menace to the health of the community, may be ordered to an institution or hospital for medical treatment after an adequate hearing and on affidavit of at least one duly licensed physician verifying the existence of the venereal disease in a communicable stage. S. 555 proposes the creation in the department of health of a bureau of health clinics with duties, among other things, to make surveys and investigations to determine the desirability or need of health clinics in certain areas, to prepare suitable facilities and appoint the necessary personnel for the establishment of such clinics and to assume charge of and operate any existing health clinic or merge the same with any existing or new project. H. 235, proposing to authorize the state board of medical education and licensure to issue temporary certificates to physicians licensed in other states to authorize them to practice medicine and surgery in Pennsylvania for the duration of the present war and six months thereafter, was amended to provide that such temporary licentiates must have scholastic qualifications equivalent to those required by the law of Pennsylvania.

Wisconsin

Bill Introduced.—A. Jt. Res. 53 proposes a resolution that the state board of health, state board of medical examiners, state board of dental examiners and the several professional societies be requested to ask all practicing physicians and dentists to ascertain, as far as possible, whether patients are now or are on any subsequent date veterans of the present war and, if so, to preserve case histories thereof for at least six years after the date of the last professional service rendered.

Bill Enacted.—S. 53 has become chapter 43 of the Laws of 1943. It exempts members of the armed forces from being required to maintain a license to practice any profession within the state and suspends such license during the active service of such person with the right to renew same within six months after his discharge from the armed forces.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

GEORGIA

Campaign Against Whooping Cough.—The state department of public health, in cooperation with private practitioners, was to open up a campaign against whooping cough about April 15. The health department will absorb 80 per cent of the cost of the vaccine to be used, thereby making it available at a nominal price. Only infants above 5 months of age and those children below 3 years of age will be immunized.

Plood Donor Service Expands.—The Atlanta Chapter of the American Red Cross is now housed in a new blood donor center at 291 Peachtree Street. The floor space has been divided so as to provide a registration room, a bleeding room, offices for the doctor in charge, the head nurse and the Volunteer Red Cross director, a canteen for the administrative staff where light refreshments will be served to blood donors after they have made their contributions, a recovery room, a telephone center with blackboards showing the daily schedule of appointments, and a laboratory with all equipment necessary for handling the blood donations. The blood will be sent from Atlanta to Indianapolis, where it will be turned into dried plasma to be shipped wherever needed.

Certification Form Omits Names of Parents.—Under a recently enacted bill, the state department of public health is authorized to certify only the following items for the issuance of birth certificates: name of child, date of birth, place of birth, color and sex. The new certification form omits the names of parents and the information as to whether or not the child is legitimate. Certified copies of birth records containing complete information thereof shall be issued only by the state department of health or other officials authorized to issue certified copies of birth records on request of the person whose record of birth is registered, if of age; either parent of the person whose record of birth is registered; the legal representative of the person whose record of birth is registered; order of any court of record; any governmental agency, state or federal, provided such certificate shall be supplied without cost to the state.

ILLINOIS

State Expands Service to Mental Patients.—The state department of public welfare announces that plans are being completed, in cooperation with universities and colleges, for the expansion and standardization of psychologic service to patients of the eleven state mental hospitals. The service, which will be under the supervision of the chief psychologist, to be appointed, will augment the psychiatric and social services which have become a part of the system of treatment and will remove the state hospitals further from being custodial institutions. Professional psychologists have already been placed at most of the hospitals and arrangements have been made with the University of Chicago, Northwestern University, MacMurray College, Jacksonville, and others to reinforce the staffs by assigning graduate students and interns in psychology. The program has been in effect at Elgin State Hospital, Elgin, with Phyllis Wittman in charge as psychologist, one assistant, two graduate students serving their internships as aides and a research fellow from the Social Science Service Council. The hospital has given training to twenty-eight graduate students in psychology.

Chicago

Personal.—Dr. Gustavus M. Blech recently received a distinguished service citation from the American Legion Department of Illinois for services to "nation, state and the community."

Course in Motility of the Eyes.—The semiannual course in motility of the eyes from a neurologic point of view will be presented at the Children's Memorial Hospital by Dr. George P. Guibor, May 9-14. The class is limited to those interested in motor difficulties of the eyes.

LOUISIANA

State Medical Meeting.—The sixty-fourth annual meeting of the Louisiana State Medical Society at the Heidelberg Hotel, Baton Rouge, May 3, will consist of a business meeting of the house of delegates and an evening session devoted to the presidential address by Dr. Emmett Lee Irwin, New Orleans, a memorial address for deceased members, and the annual oration by Gov. Sam Houston Jones, Baton Rouge. The woman's auxiliary to the society will also meet at the Heidelberg Hotel.

Training in Medical Librarianship.—The residency in medical library work, sponsored by the Orleans Parish Medical Society Library, New Orleans, will be open on August 15. Appointment will be made on July 1. Requisite qualifications for appointment include college and library school training and an evidence of fitness for this type of work, by personality and aptitude. The appointment carries a nominal salary and is for a term of one year. The work is done in the library of the Orleans Parish Medical Society and its cooperating unit, the Rudolph Matas Medical Library of Tulane University School of Medicine, comprising a collection of approximately sixty-five thousand volumes. The course is personally directed by the librarian in charge of the two libraries and proposes to cover a study of medical library administration used in these libraries and a comparison with varying methods used elsewhere. Any one wishing further information should address the librarian, Orleans Parish Medical Society Library, 1430 Tulane Avenue, New Orleans.

MASSACHUSETTS

New Professor of Bacteriology at Tufts.—Dr. Ralph E. Wheeler, assistant professor of preventive medicine and public health, Vanderbilt University School of Medicine, Nashville, Tenn., has been named to a new professorship of bacteriology at Tufts College Medical School, Boston, effective April 1. Another chair of bacteriology is held by Basil G. Bibby, D.M.D., Boston, dean of the dental school. Dr. Wheeler graduated at Harvard Medical School, Boston, in 1926, receiving the degree of doctor of public health at Johns Hopkins University, Baltimore, in 1932. Dr. Wheeler has served as consultant and later surgeon in the U. S. Public Health Service and as research associate of the Milbank Memorial Fund of New York.

MICHIGAN

Changes in Faculty at Wayne University.—Dr. Clement A. Smith, formerly of Boston, has been appointed professor of pediatrics at Wayne University College of Medicine, Detroit, effective May 1. He succeeds Dr. James L. Wilson, Detroit, who has accepted a position on the faculty of New York University College of Medicine. Dr. William E. Abbott, Cleveland, has been appointed instructor in surgery at Wayne and Dr. John W. Hirshfeld has been promoted to assistant professor of surgery.

Graduate Program.—The spring "Michigan Program for Graduates in Medicine" opened in April in eight lower peninsula cities—Ann Arbor, Bay City, Flint, Grand Rapids, Jackson, Kalamazoo, Mount Clemens and Traverse City; in the upper peninsula, meetings are planned to begin in Sault Ste. Marie, May 24; Marquette, May 25; Houghton, May 26; Ironwood, May 27, and Powers, May 28. The program is conducted semiannually by the Michigan State Medical Society in cooperation with Wayne University College of Medicine, Detroit, the University of Michigan Medical School, Ann Arbor, and the Michigan Department of Health, Lansing.

MINNESOTA

State Medical Meeting.—The ninetieth annual session of the Minnesota State Medical Association will be held at the Hotel Radisson, Minneapolis, May 17-19, under the presidency of Dr. Stephen H. Baxter, Minneapolis. A symposium on fractures will open the meeting Monday and each day round table luncheons will be held to cover a wide range of medical topics. Among the speakers on the program will be:

Dr. Ralph K. Ghormley, Rochester, Tendon Injuries.
Dr. Frank C. Neff, Kansas City, Mo., Practical Applications of a Routine Blood Count in the Newborn with Special Reference to the Obstetrical Nursery.
Dr. James M. Hayes, Minneapolis, Fascia Lata in Repair of Hernia.
Dr. Everett D. Kiefer, Boston, Peptic Ulcer.
Dr. John M. Waugh, Rochester, Vaginal Hysterectomy.
Capt. Erik G. Hakansson (MC) U.S.N., Control of Tropical Diseases.
Dr. Herman O. McPheeters, Minneapolis, Skin Grafting.
Albert E. Russell, senior surgeon, U. S. Public Health Service, Silicosis.

Other topics to be discussed on the program will be care of the aged, abnormal uterine bleeding, cardiovascular disease, myasthenia gravis, newer therapeutics in surgery and child health in wartime. Dr. Ralph S. Bromer, Bryn Mawr, Pa., will deliver the annual Russell D. Carman Memorial Lecture, Monday, on "Roentgen Diagnosis of Diseases of Infants and Children." Three special societies are sponsoring visiting speakers for the meeting: the Minnesota Radiological Society, Dr. Bromer; the Northern Minnesota Medical Association, Hon. Walter H. Judd, congressman from the Fifth District, and the Northwestern Pediatrics Society, Dr. Neff.

MISSISSIPPI

State Medical Meeting.—The seventy-sixth annual session of the Mississippi State Medical Association will be held at the Heidelberg Hotel, Jackson, May 12-13, under the presidency of Dr. H. Lowry Rush, Meridian, whose address will be entitled "Today's Challenge to Medicine." Among the speakers will be:

Dr. Claude C. Pierce, New York, Conception Control—A Public Health Responsibility.
Dr. Julius W. Davenport Jr., New Orleans, Human Blood Plasma—A Review of Its Preparation and Clinical Indications for Its Use.
Dr. John J. Shea, Memphis, Tenn., Fungus Problems of the Ear, Nose and Throat.
Dr. William B. Clark, New Orleans, Glaucoma.
Dr. Edgar Burns, New Orleans, Recent Advances in Treatment of Carcinoma of the Prostate.
Dr. Carl M. Peterson, Chicago, Secretary, Council on Industrial Health, American Medical Association, Industrial Medicine and the General Practitioner.

The Ewing Fox Howard Oration will be delivered Tuesday evening at a public session by Dr. Charles C. Bass, New Orleans, on "Prevention of the Loss of Teeth."

NEBRASKA

Outbreak of Scarlet Fever.—Two hundred and eighty-two women students at the University of Nebraska, Lincoln, were quarantined, April 5, in a women's residence hall after a medical checkup revealed 32 cases of scarlet fever, newspapers reported. It was stated that an isolation ward had been set up in the dormitory and the 32 patients placed there.

NEW HAMPSHIRE

State Medical Meeting.—The one hundred and fifty-second annual meeting of the New Hampshire Medical Society will be held at the Hotel Carpenter, Manchester, May 11, under the presidency of Dr. Timothy F. Rock, Nashua. Among the speakers will be:

Dr. John P. Bowler, Hanover, Carcinoma of the Prostate and Its Endocrine Relationships.
Dr. Oliver Cope, Boston, The Treatment of Burns.
Dr. Roger I. Lee, Boston, Geriatrics: The Medical Care of the Elderly.
Dr. Andre William Reggio, regional medical officer, First Civilian Defense Region, Boston, Civilian Medical Defense and Its Adaptation to Peacetime Civil Life.
Dr. George V. S. Smith, Brookline, Mass., Female Sex Hormone Therapy.

The Woman's Auxiliary to the New Hampshire Medical Society will hold its eighteenth annual meeting at the same time. Speakers will include Tehyi Hsieh, Boston, on "China's Vital Role in World Democracy."

NEW YORK

Dr. Whipple Awarded Medal.—The Civic Medal, awarded annually by the Rochester Museum Association, will be presented on May 13 to Dr. George H. Whipple, dean of the University of Rochester School of Medicine and Dentistry. In 1934 Dr. Whipple was co-winner with Drs. George R. Minot and William P. Murphy of Boston of the Nobel Prize in Medicine.

Forum on Increase of Manpower.—An open forum of the Buffalo District Committee for Industrial Health was devoted on April 16 to the theme "Increase Manpower Through Industrial Health." A panel discussion was held with Dr. Herbert H. Bauckus, Buffalo, acting as chairman and Dr. Clarence D. Selby, Detroit, leading the discussion on "Industrial Health in the Nation at War."

Child Care Group Formed.—The Buffalo Victory and Child Care Association, Inc., has been organized to share with the local government one third the cost of expensive facilities for the caring for children of women workers, the New York *Times* reported April 6. Under a recent state law, the residual cost is to be shared equally by the state and the mothers. Children up to 14 years of age will be eligible for care under the program, which, it is planned, will be in operation by July 1. Harold B. Ehrlich, assemblyman, has been named executive secretary of the new group which represents the war industries of the region. A movement is now under way to extend the plan to cover all war and allied industries in Erie and Niagara counties.

New York City

Epidemic of Infantile Diarrhea.—Up to April 11 ten deaths had occurred in an epidemic of infantile diarrhea in the Staten Island Hospital at Tompkinsville, according to the New York *Times*. The cause of the outbreak had not been determined. The maternity and pediatric departments of the hospital have been closed and all new cases are being cared for at St. Vincent's Hospital at West New Brighton.

Suspend License of Dr. Cowles.—The medical license of Dr. Edward Spencer Cowles was suspended on April 16 for one year by the state board of regents, which found him guilty of "fraud and deceit" in his conduct of his Body and Mind Foundation, the New York *Times* reported. The action of the board was unanimous, and the suspension will become effective with the service of a formal order. The Body and Mind Clinic at 139 East 69th Street was closed in April 1942. The state began proceedings to close the clinic on the grounds of unlawful practice of medicine, charging Dr. Cowles with unethical conduct in permitting two employees, Robert Rebold, a chemist, and Mrs. Eveline Dolin Schulman, a psychologist, to practice medicine without licenses. The prosecution charged, it was stated, that the clinic did a $500,000 a year business for treating patients in mass meetings for mental disorders. The clinic was put out of business by the court of special sessions on June 16, the *Times* stated. Rebold was convicted but received a suspended sentence. Mrs. Schulman was acquitted. Dr. Cowles went on trial before the subcommittee of the state medical grievance committee on May 22, the hearings being conducted at long intervals. Dr. Cowles, aged 63, graduated at the University College of Medicine, Richmond, Va., in 1907. The first Body and Soul Medical and Mental Foundation, as it was originally called, was established by him in July 1923 in the Episcopal Church of St. Mark's-In-The-Bouwerie. It continued there until 1932, when it was ousted, after a quarrel with the vestry, the *Times* stated. The clinic moved to 142 Second Avenue and after two years to a converted garage at 139 East 69th Street, the name being changed to Body and Mind Foundation, Inc. (THE JOURNAL, May 9, 1942, p. 197 and July 4, 1942, p. 819).

Committee to Study Medicine and the Changing Order.—The New York Academy of Medicine has organized a committee to study medicine and the changing order with Dr. Malcolm Goodridge as chairman. The objectives of the committee are defined as follows:

To be informed on the nature, quality and direction of the economic and social changes that are taking place now and that are clearly forecast for the immediate future; to define in particular how these changes are likely to affect medicine in its various aspects; to determine how the best elements in the science of medicine and its services to the public may be preserved and embodied in whatever changed social order may ultimately develop.

The committee plans to survey the changes that are currently taking place in economic and social organization likely to take place during the next decade. It will solicit opinions from a wide variety of groups including sociologists, economists, representatives of organized labor, industrialists, bankers and politicians, as well as the cooperation of persons actually connected with medicine in the capacities of deans of medical schools, teachers of medicine, hospital authorities, hospital clinicians, public health workers, those interested in graduate education, physicians in industrial medicine, medical social workers and workers in voluntary health organizations. The committee seeks to devote itself primarily to the study of how, within the changing social order, the best qualities in medical service, in medical education and in medical research can be preserved and developed. It is expected that the study will continue until such time as sufficient evidence has been accumulated to make possible a considered report. In addition to Dr. Goodridge, other members of the committee include: Drs. Arthur F. Chace, James Alexander Miller, Alan Gregg, George Baehr, Washington, D. C.; Harry Aranow, I. Ogden Woodruff, Paul Reznikoff, Henry W. Cave, Tracy J. Putnam, Wilson G. Smillie, Jean A. Curran, Brooklyn; Herbert B. Wilcox, Howard R. Craig, Edward Tolstoi, Eugene H. Pool, Robert E. Pound and Iago Galdston, secretary.

NORTH CAROLINA

State Medical Meeting.—The ninetieth annual session of the Medical Society of the State of North Carolina and the twenty-first annual meeting of the woman's auxiliary to the society will be held at the Hotel Sir Walter, Raleigh, May 10-12. Speakers will include:

Lieut. Col. Charles W. Mayo, M. C., Army of the United States, One Stage Combined Abdominoperineal Resection for Malignancy of the Lower Colon, Rectosigmoid and Rectum.
Dr. William Banks Anderson, Durham, Unilateral Exophthalmos as a Diagnostic Problem.
Dr. LeRoy M. Polvogt, Baltimore, Recent Advances in Chemotherapy as Applied to Otolaryngology.
Capt. Waltman Walters, M. C., U. S. Naval Reserve, Treatment of War Casualties.
Capt. Carl T. Javert, M. C., Army of the United States, A Combined Isometric and Stereoscopic Technic for Radiographic Study of the Obstetrical Patient.
Drs. William H. Sprunt and James A. Harrill, Winston-Salem, Diagnosis and Treatment of Cardiospasm.
Dr. Grace G. Jones, Charlotte, Retroperitoneal Position of the Ascending Colon.
Dr. Richard S. Lyman, Durham, Some Principles of Diagnosing Malingering and Hysteria.
Major Philip W. Brown, M. C., Army of the United States, Amebiasis.
Dr. Walter R. Berryhill, Chapel Hill, Atypical Pneumonia of Unknown Etiology.

There will also be a report of the committee on award of Moore County Medal for the best paper read in 1942 session and presentation of the medal to Dr. Edwin P. Alyea, Durham, for his paper on "Castration for Carcinoma of the Prostate Gland."

SOUTH CAROLINA

Journal Club Formed.—The Medical Journal Club was recently organized at the Veterans Administration Facility, Columbia, for the purpose of perusing current literature in the fields of internal medicine and surgery. Membership is open to staff physicians of the veterans hospital as well as to physicians in Columbia. Officers are Drs. Solomon L. Zimmerman, president; Manuel D. Zane, secretary, and P. Mertz, treasurer.

TEXAS

New Hospital Association Officers.—Miss Eva M. Wallace, R.N., superintendent, All Saints Episcopal Hospital, Fort Worth, was chosen president-elect of the Texas Hospital Association at its meeting in Fort Worth, February 18-19, and Mr. A. C. Seawell, superintendent, City and County Hospital, Fort Worth, was installed as president. The association decided to hold its next meeting in Dallas, Feb. 23-24, 1944. The recent meeting of the association was a war conference.

WISCONSIN

The William Snow Miller Lecture.—Dr. Marius N. Smith-Petersen, clinical professor of orthopedic surgery, Harvard Medical School, Boston, gave the sixteenth annual William Snow Miller Lecture at the University of Wisconsin Medical School, Madison, April 15, under the auspices of Phi Beta Phi. His subject was "Arthroplasty."

Personal.—Dr. Harold M. Coon, Madison, medical superintendent of the State of Wisconsin General Hospital, was recently elected president of the Wisconsin Hospital Association at its meeting in Milwaukee.——Walter E. Sullivan, Ph.D., professor of anatomy and chairman of the department, University of Wisconsin Medical School, Madison, is serving for six months as visiting professor of anatomy at Washington University School of Medicine, St. Louis.——Dr. Marshall W. Meyer, Ashland, former director of sanitary district number 9 in that city, has been named director of district number 6. He succeeds Dr. Allan A. Filek, now director of the division of local health service and tuberculosis control of the state board of health, Madison.

Guide Published for Special Diets in Rationing Program.—The *Wisconsin Medical Journal* for April carried a special supplement entitled "Extra Ration Points for Special Diets." Prepared in cooperation with the Dane County War Price and Rationing Board by a special committee of the Dane County Medical Society, the supplement is a guide for the physician and rationing boards in the procedure to be followed in providing extra ration points. Members of the committee are Drs. Elmer L. Sevringhaus, chairman; Jack S. Supernaw, John E. Gonce Jr., James P. Dean, Nels A. Hill, Lester McGarry, and the following dietitians: Esther Bast, Methodist Hospital; Jeanette Mikeljohn, Madison General Hospital; Ruth Dickie, State of Wisconsin General Hospital, and Elizabeth Hilgers, St. Mary's Hospital, all of Madison.

GENERAL

Theobald Smith Award.—The Theobald Smith Award of $1,000 and a bronze medal of the American Association for the Advancement of Science, established by Eli Lilly and Company in 1935, has been awarded to Dr. Sidney C. Madden, assistant professor of pathology, University of Rochester School of Medicine and Dentistry, New York, for his investigations on "Plasma Proteins."

American Psychiatric Association.—"War Psychiatry" will be the theme of the annual meeting of the American Psychiatric Association at the Hotel Statler, Detroit, May 10-13. The program will include presentations concerned with the psychiatric evaluation of men to be inducted into the armed forces, the care of psychiatric casualties of the war and the treatment of men discharged from the army for psychiatric disability. Attention will also be given to the relationship of psychiatry and industrial hygiene.

Standards for the Protection of Workers in Gas and Electric Welding.—The Division of Labor Standards of the U. S. Department of Labor, Washington, D. C., has reprinted in pamphlet form the manual called "Standards for the Protection of Workers in Gas and Electric Welding," prepared by the State of New Jersey Department of Labor. These standards are for the practical guidance of superintendents and foremen, putting special emphasis on health hazards due to fumes, dusts and glare as well as accident risks from fire, explosion and shock. Copies of the pamphlet may be obtained by writing to the Division of Labor Standards, U. S. Department of Labor, Washington, D. C.

Florence Seibert Awarded Achievement Prize.—Florence B. Seibert, Ph.D., associate professor of the Henry Phipps Institute, Philadelphia, was presented, April 13, with the first $2,500 achievement award of the American Association of University Women. The fund for the award was raised by the Northwest Central Section of the association. Mrs. H. K. Painter, Minneapolis, regional vice president of the association for the northwest central section, participated in the ceremonies and Kathryn McHale, Ph.D., Washington, D. C., general director of the association, made the presentation in the Philadelphia branch headquarters of the association. The citation accompanying the award pointed out that it was designed to help Dr. Seibert with her research in tuberculosis.

Meeting of Neurologists.—The American Neurological Association will hold its sixty-ninth annual meeting at the Waldorf-Astoria, New York, May 6-7. The presidential address will be delivered by Dr. Ernest Sachs, St. Louis, on "The Contributions of War to Medicine." Among the speakers will be:

Dr. Geoffrey Jefferson, Manchester, England, Neurologic Interpretation of Acute Head Injuries.
Dr. Foster Kennedy, New York, Functional Nervous Disorders as Reported in the Present War.
Dr. John Young, Nuffield Institute, England, Process of Regeneration of Nerve and Muscle Following Immediate and Delayed Suture.
Dr. Joseph C. Yaskin, Philadelphia, and Major Melvin W. Thorner, M. C., U. S. Army, The Effects on the Cerebral Cortex of Altitude Chamber Anoxia.
Dr. Kenneth G. McKenzie, Toronto, Canada, One Aspect of the Post-Traumatic Syndrome in Craniocerebral Injuries.
Dr. Samuel B. Hadden, Philadelphia, Group Psychotherapy.

Psychoanalytic Association.—The forty-fifth annual meeting of the American Psychoanalytic Association will be held at the Hotel Statler, Detroit, May 9-12, under the presidency of Dr. Karl A. Menninger, Topeka, Kan. The speakers will include:

Dr. Ives Hendrick, Boston, Instinct and the Ego During Infancy.
Dr. Carl M. Herold, New York, Pleasure Principle and Drive Therapy in Reference to Psychophysiology.
Dr. Sándor Lorand, New York, Psychoanalytic Investigation of Reaction to the War Crisis of Candidates for Induction.
Dr. René A. Spitz, New York, Prophylaxis versus Treatment in Treatment in Traumatic Neuroses.
Dr. Gregory Zilboorg, New York, The Fear of Death in War and Peace, at Home and in the Field.

The program also includes a symposium on "Present Trends in Psychoanalytic Theory and Practice" with Dr. Lewis B. Hill, Baltimore, as the moderator.

Judicial Commission on Bacteriologic Nomenclature.—A judicial commission on bacteriologic nomenclature has been selected, following recommendations approved at the third international congress of microbiology in New York in September 1939. The selection of the committee was of necessity made by ballot, the choice finally being completed in November 1942. A communication from Robert S. Breed, Ph.D., head of the division of bacteriology, New York State Agricultural Experiment Station, Geneva, N. Y., asks that consid-

eration be given to the belated appointment of this committee in order that some plan for taking tentative action on questions of nomenclature may be developed by those members of the commission who can be reached under war conditions. Robert E. Buchanan, Ph.D., Ames, Iowa, has been asked to act as chairman pro tem of the judicial commission, as there is no possibility of securing an election under the rules as adopted. Dr. Breed with Dr. Ralph T. St. John-Brooks, London, are the joint permanent secretaries of the International Committee on Bacteriological Nomenclature. The members of the committee, as reported by Dr. Breed, are Dr. Buchanan, A. J. Kluyver, the Netherlands; Everitt G. D. Murray, Montreal, Canada; S. Orla Jensen, Denmark; James Howard Brown, Ph.D., Baltimore; A. R. Prevot, France; James Ramsbottom, Great Britain; T. Thjötta, Norway; A. Lwoff, France; R. Renaux, Belgium; Alfredo Sordelli, Buenos Aires, Argentina, and C. Stapp, Germany.

Drug Manufacturers Association.—The annual convention of the American Drug Manufacturers Association will be held at the Palmer House, Chicago, May 2-4. Among the speakers will be:

Dr. Elmer L. Sevringhaus, Madison, Wis., Commercial Production of Hormone and Vitamin Extracts.
Milton V. Veldee, Bethesda, Md., senior surgeon, U. S. Public Health Service, The Place of Biologists in Warfare.
Lehan K. Tunks, legal staff, Office of Price Administration, The Operation of the OPA in Relation to the Drug Industry, Including an Explanation of the "Automatic Regulation Establishing Maximum Prices for Drugs."
Donald S. Whitney, attorney, Norwich Pharmacal Company, Norwich, N. Y., A Review of Important Cases Affecting the Drug Industry.
Franklyn Bliss Snyder, LL.D., Evanston, Ill., Education, Research, and the War.
Laurence A. Appley, executive director, War Manpower Commission, Washington, D. C., Full Mobilization and Utilization of Manpower in Time of War.
Dr. Austin E. Smith, Chicago, Secretary, Council on Pharmacy and Chemistry, American Medical Association, Research and Therapeutics.
Joseph D. Coppock, price executive, Office of Price Administration (subject not announced).

Dr. Alexander W. Lescohier, Grosse Point, Mich., will be toastmaster at the dinner May 3 with Anton J. Carlson, Ph.D., Chicago, on "How We May Improve Our Respective Performance for a Better National Health" and the Hon. C. Wayland Brooks, Chicago, United States Senator. A luncheon session on May 4 will be addressed by Dr. Morris Fishbein, Editor, THE JOURNAL, with John S. Zinsser, Philadelphia, presiding. One feature will be a symposium on military medicine conducted by Col. Clifford V. Morgan, M. C., U. S. Army. The symposium will be divided into a consideration of the plans and operations, aviation medicine, supply service and the treatment of burns. Among the speakers will be: Lieut. Col. Arthur B. Welsh, Col. Walter S. Jensen and Col. Morgan, all of the army medical corps, and Capt. Erik G. Hakansson (MC) U.S.N. Other military speakers on the program will be Brig. Gen. Charles C. Hillman, Brig. Gen. James S. Simmons, Brig. Gen. George F. Lull, Col. Charles F. Shook Sr., Col. Martin E. Griffin, all of the army medical corps, and Capt. Carlton L. Andrus (MC) U.S.N. They will take part in the discussions of the various subjects.

Deaths in Other Countries

William Albert Hoffman, Sc.D., assistant professor of parasitology at the Columbia School of Tropical Medicine, San Juan, P. R., was found dead in his office, April 4. Dr. Hoffman had been with the school of tropical medicine since 1926, devoting his researches chiefly to medical entomology.

Government Services

Annual Report of United States Public Health Service

The Office of War Information has decided that the annual reports of the Surgeon General of the U. S. Public Health Service will be discontinued for the duration of the war.

Annual Report of Veterans Administration

The total hospital load of the Veterans Administration was 56,346 for the fiscal year ended June 30, 1942, as compared with 58,417 on June 30, 1941, according to the annual report of the Administrator of Veterans' Affairs. The neuropsychiatric load increased 154 and the tuberculosis 257, while the general load decreased 2,482. At the close of the year 76.82 per cent of the United States veterans under hospitalization were receiving treatment for disabilities not of service origin as compared with 78.53 per cent for the previous comparable period. Of the total patient load 56,073 were United States veterans, classified by service as follows: World War I, 49,140; World War II, 832; Spanish-American War, 2,951; Civil War, 18; all other wars, expeditions and occupations, 55; and Regular Establishment, 3,077. There were 12,999 United States veterans under treatment for diseases or injuries determined to be of service origin, of whom 10,201 had service in World War I, 743 in World War II, 22 in the Spanish-American War, 2,032 in the Regular Establishment during peacetime, and 1 in other wars, occupations or expeditions. In addition to United States veterans there were under treatment 31 veterans of countries allied with the United States in the World War, 18 employees of the Civilian Conservation Corps and Work Projects Administration and 224 miscellaneous beneficiaries. Of the patients in hospitals at the close of this year, 8.77 per cent were under treatment for tuberculosis, 61.59 per cent for neuropsychiatric diseases and 29.64 per cent for general medical and surgical conditions. Of the 56,073 United States veterans under treatment at the end of the year, 52,999 were in facilities controlled by the veterans administration, 2,080 in other government hospitals and 994 in state or civil institutions.

An analysis of the types of hospital admissions of veterans shows that 62,082, or 34.6 per cent of the total, were first admissions; 109,232, or 60.9 per cent, readmissions, and 7,960, or 4.5 per cent, admissions by transfer from other facilities. During the year 9,658 admissions were authorized for the observation and treatment of pulmonary tuberculosis, 10,200 for psychotic or mental diseases, 14,101 for other neurologic disorders and 145,315 for general medical and surgical conditions. During the year 242,157 patients were under hospitalization, of whom 239,001 were United States veterans. Of the latter group 182,928 were discharged after an average of 78.7 inpatient days. Deaths in hospitals totaled 12,977, or 7.09 per cent, of the discharges as compared with 12,891 in 1941. Of the total deaths 9,354 occurred in patients under treatment for general conditions, 1,919 for pulmonary tuberculosis and 1,704 for neuropsychiatric diseases. Of the 9,354 deaths among general patients, about 28 per cent were caused by diseases of the circulatory system, about 25 per cent by malignant tumors and about 9 per cent by diseases of the digestive system. On June 30, 1942 the veterans' administration was operating hospital facilities at ninety-two locations in forty-five states and the District of Columbia. These facilities had a capacity of 62,453 beds, an increase of 604 over the number available on July 1, 1941. A new hospital was opened at Marion, Ill., and additional beds were provided at Jefferson Barracks, Mo., Los Angeles, Newington, Conn., Perry Point, Md., Tuscaloosa, Ala., and Whipple, Ariz. The administration was also using 1,599 beds in other government hospitals. There were 18,371 beds set aside for domiciliary care in facilities under the veterans administration facilities as compared with 18,747 on June 30, 1941, a decrease of 376, due primarily to loss by fire at Dayton, Ohio. At the close of the recent fiscal year work was in progress on thirteen projects to provide 1,256 beds.

The net operating expenses for all hospital and domiciliary facilities controlled by the veterans administration totaled $64,891,086, of which $59,054,871 was for hospital and $5,836,214 for domiciliary facilities. This amount does not include expenditures for new construction, improvements, constructional alterations, maintenance and operation of personnel quarters, nonexpendable equipment or those for the diagnostic centers at San Francisco and Hines, Ill. Throughout the year there was a daily average of 54,636 patients of all types under treatment and a daily average of 14,371 beneficiaries receiving domiciliary care, as compared with 54,582 and 16,696 respectively during the fiscal year 1941. The per diem cost of operation for hospital facilities used principally for the treatment of tuberculosis was $4.37, for those used exclusively for the treatment of neuropsychiatric diseases $2.02, and for those used largely for the treatment of general medical and surgical conditions $4.24. Collectively the per diem cost of operation for hospital facilities of all types was $2.96. The per diem cost of operation for domiciliary facilities for this year was $1.11.

Three new physical therapy clinics were opened at Perry Point, Md., Tuscaloosa, Ala., and Marion, Ill. One in the Los Angeles facility was closed temporarily because of the partial evacuation program instituted because of its critical location. An artificial fever therapy clinic was established at the Northport, Long Island, N. Y., facility and will be used as a center for training other physicians and nurses in the administration of artificial fever.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 13, 1943.

Preparations for the Relief of Europe After the War

The appalling misery of Europe under German occupation, including the starvation of children, has been described in previous letters. Although we are engaged in our maximum war effort we are preparing relief measures, so that they can be applied immediately on liberation of the occupied countries without waiting for an armistice. The need for this is shown in a lecture to the British Red Cross Society by Dr. Melville Mackenzie, principal medical officer of the Ministry of Health. He pointed out that in the three years following the last war more died from famine and preventable disease than had been killed in the war itself and that their deaths were largely the result of administrative chaos in relief. Already malnutrition, with its resulting diseases, particularly tuberculosis, is widespread. It is estimated that at the present moment 200 million persons in Europe are urgently in need of more food. Typhus fever is now epidemic in most of eastern and much of central Europe as well as in Spain and North Africa. Malaria also is increasing.

Food, of course, is the primary need, and then come medical supplies. The control of epidemic diseases—typhus, malaria, dysentery and tuberculosis—is urgent. The medical hospital and health services have to be reestablished. In all the occupied countries there is a shortage of doctors, nurses and midwives. There is also a shortage of potential doctors, for many universities have been closed by the Germans and most of those who would be medical students are serving in the armies. The reorganization of the faculties of medicine of the universities of Europe will be a pressing need.

In September 1941 an allied conference was held in London on postwar requirements. A committee representing fourteen governments was set up to enable the allied governments to collaborate in supplying food and other necessities immediately on liberation of the occupied countries. An allied postwar requirements bureau was established to assist the various governments in preparing estimates of relief requirements. The staff of this bureau is provided by the British government. The work is carried on mainly by technical advisory committees, of which there is a medical one containing representatives of the British, American and allied governments. The work of this medical advisory committee covers the whole of Europe. In order to obtain the best technical advice, expert subcommittees have been set up on such subjects as drug and hospital requirements, including those for surgery, radiology, dentistry and bacteriology, tuberculosis, maternity and child welfare, malaria, typhus, typhoid, dysentery, cholera and diphtheria.

Another Munificent Gift from Lord Nuffield to Medicine

The name Nuffield will rank for benefactions with Carnegie, Rhodes and Rockefeller. The latest gift of this automobile magnate eclipses his previous numerous donations and, like many of them, helps medicine. Lord Nuffield has stated his intention of founding forthwith a charitable trust to be known as the Nuffield Foundation, for which he will hand over to trustees his shareholdings in the Nuffield Organization to the value of $50,000,000 as a capital fund. Among the managing trustees are two members of the medical profession—Prof. Sir John B. Stopford (anatomist) and Miss Janet Vaughan (pathologist). The objects which the trustees will endeavor to assist are medical research and teaching, organization and development of medical and health services, scientific research and teaching in the interests of trade and industry, social studies, and the care and comfort of aged persons. The managing trustees are enjoined to consult the appropriate ministers or departments of state in connection with any matter of major importance in which they may become interested, but they are not to be in any way bound by the views expressed. Lord Nuffield points out that his donation comes from resources built up by private enterprise, in the importance of which he is a firm believer. This declaration is needful at a time when people are looking to the state to do so much for them.

Articles of Clothing and Bedding Not Important in the Dissemination of Scabies

In a memorandum issued by the Ministry of Health it is stated that recent investigations have shown that while articles of clothing and bedding may play some part in the spread of scabies, their importance as a means of dissemination has been much overestimated and that with standard methods of treatment (benzyl benzoate emulsion or sulfur ointment) routine disinfestation of clothing is unnecessary, as the layer of medicament which covers the body after treatment is usually sufficient to kill all mites on the clothing. Moreover, in view of the small reinfestation rate when disinfestation has been abandoned, it is simpler to repeat treatment rather than expend an amount of manpower and material required for routine disinfestation in all cases. Emphasis should rather be laid on the follow-up treatment of the family and other close contacts of the original case. On occasion disinfestation may be justified, as for instance when there is a high incidence of scabies among people living in overcrowded conditions and compelled to use communal bedding and clothing.

Blood Transfusion in the Desert

The distribution of blood to the army fighting in the Middle East has been a most difficult problem. In the Libyan battle of 1941 blood was sent by air to those advanced depots of medical stores that had oil burning refrigerators. From these it was collected by field transfusion units and taken to casualty clearing stations or other places. Advanced depots in battle areas held stocks of dextrose-saline solution, serum, dried plasma and apparatus for replacement. In the recent battle of El Alamein a more elaborate system was adopted, which is described in the *Army Medical Bulletin*. A field transfusion unit was located at the advanced air transport center, to which blood was brought by airplane from the base. This unit collected, if necessary stored, and then forwarded the blood by ambulance airplane if available, or by refrigerator truck, to an augmented field transfusion unit stationed in the medical concentration area, where a number of casualty clearing stations were situated. From this unit supplies were issued (1) to the casualty clearing stations and other transfusion units and (2) to an advanced blood bank consisting of a refrigerator truck with personnel. The latter supplied casualty clearing stations in the vicinity and units in the more inaccessible southern section of the line.

For transporting the blood, boxes are made from salvaged tin and wood by a carpenter and a tinsmith employed at a base transfusion unit. They are tin lined so that small boxes or bottles of ice can be packed round the bottles. It was feared at first that blood in transit across the desert would hemolyse through jolting and splashing in its bottle. But this was found to happen very little. When possible, blood is not used more than three weeks after it has been taken, but blood five weeks old, which showed only slight hemolysis, has been transfused with success. Units with the British expeditionary force in France used blood after seven weeks' storage. But five weeks is a long time to preserve blood in a hot country

and speaks well for the refrigeration. Between Oct. 16 and Nov. 5, 1942 nearly 11,000 bottles or ampules containing fluids for intravenous use were sent forward, including 3,220 bottles of fresh blood obtained by the base transfusion unit from troops in the base area.

TEL AVIV, PALESTINE

Feb. 14, 1943.

(From Our Regular Correspondent)

Epidemic of Lymphocytic Choriomeningitis

Following sporadic cases of benign meningitis in various parts of Palestine, Dr. Falk of the General Federation of Jewish Labor in Palestine reported a number of cases in Hadera in May 1941. By June the outbreak assumed the character of an epidemic, reaching its peak in July, with a rapid decline in August and a drop to only a few isolated cases in the following three months. Sixty-six cases were carefully examined, but the incidence was undoubtedly much greater. Only a few infants were affected, the majority of victims being between the ages of 4 and 7. A few adults contracted the disease. Examination showed that the epidemic attacked certain blocks of houses, but it was comparatively rare for several members of the same family to contract the disease, which began suddenly, without prodromal symptoms, with high fever and intense headache, vomiting and cramps. The temperature curve was almost constant: high for two or three days, followed by a one to three day afebrile interval and then a slight rise in the curve. In a number of cases a tumor of the spleen developed. Leukocytes were between 6,000 and 25,000. The differential count was not characteristic. The usual symptoms of meningitis were not always distinctly observable, and often the typical spinal fluid finding and subjective symptoms were absent. The nerves of the brain were unaffected; however, 2 cases of encephalitis occurred, apparently connected with the meningitis. In half the cases the cell rate in the fluid was up to 100. In several cases a large number of segmented cells in the fluid were found. The fluid was usually clear. A fine fibrin clot was also found. The pressure was usually raised, and the qualitative albumin reaction was nearly always positive, while the quantitative reaction was 12 to 66 mg. per hundred cubic centimeters, the average being 36. The sodium chloride rate fluctuated between 519 and 661 mg. per hundred cubic centimeters and the sugar in the fluid from 51 to 75 per cent. The mastix curve only occasionally showed slight rises up to 221,000. It was imposible to prove the presence of bacterial organisms or virus in the blood and fluid. We can only determine, therefore, the nearest clinical relationship but not the actual identity of the disease with benign lymphocytic choriomeningitis. According to the observations of Dickens, Baird and Ribers, the distinguishing feature is probably the fact that considerable polynucleose is found in the fluid instead of lymphocytose, and that the number of cells in the fluid is often not particularly high.

The disease was in almost all cases benign, usually without complications. In a few cases the knee jerk reflex was absent for some time. Except for lumbar puncture and symptomatic therapy, no other treatment was necessary.

The First Case of Madura Foot in Palestine

Madura foot was formerly considered a disease peculiar to tropical countries; however, it occurs, though rarely, in temperate and subtropical climates.

Madura foot, or more correctly, mycetoma pedis, is the name applied to pathologic processes appearing mainly in the area of the leg but sometimes also in other parts of the body, such as the hand or the abdomen, the symptoms of which are swelling, the formation of fistulas and wrinkling of the epidermis. The processes are conditioned by the growth of various fungi, which are also called mycetoma grains, bodies of different sizes, shapes and colors, made up mainly of mycelium threads and sometimes also of chlamydospores. The fungi are found in the infected epidermis or in the liquid excrescence. The grains are yellow, white, red or black and are formed in the process of the struggle of the fungus with the powers of resistance of the mycelium.

This disease was first heard of in India (the island of Madura is situated opposite to Java). Cases were later reported from other countries. Apart from India the disease is known in Brazil, Argentina, Africa and most of the Mediterranean countries. More than half of the cases in Europe occurred in Italy and Greece. The first case in Italy was reported by Bassini in 1888. Catsaras in Greece described some cases. One case came to light in Turkey. Several reports of the disease were received from Tunisia and Algeria. Cleveland and Williamson reported cases from Cyprus, and recently 1 case was heard of in Yugoslavia. One case has been reported from Portugal. Until the present instance the disease was unknown in Palestine.

Dr. Dostrowski, director of the Department of Dermatology at the Hadassah-University Hospital in Jerusalem, and his assistant Dr. Sagher give the following report of the first case of Madura foot, which they encountered in an agricultural laborer aged 32, a native of Aden, who has been resident in Palestine five years. His health has been sound, and his family origins are healthy. Six months ago he experienced a swelling the size of a lentil on the sole of his left foot. Ten days later the infected part softened and pus was released. Five days later there appeared on the sole of the foot a second nodule 10 cm. away from the first. In a month almost the entire sole became covered with such nodules, accompanied with swelling. In the last few months before the patient entered the hospital no further nodules appeared. Throughout the whole period pus was present within the nodules, and slight pain was experienced when walking. The urine and excrement, as well as the blood count, were normal. Chemically the blood was normal. The Wassermann and Kahn reactions were negative. The gastric juice contained an excessive quantity of acid. The microscopic histologic analysis proved the presence of Mycetoma fungi.

The question as to whether this case was contracted in Palestine or imported from abroad is difficult to decide. It is possible that the source of the disease in this case is Palestine, because it has been found in other countries of the Middle East and is known to be common in the Arabic countries. The occurrence of the disease in Yemen is described by Patton and Clemoy. It is therefore possible that our patient brought Madura foot with him in a latent form from Aden.

Marriages

GEORGE D. BROYLES JR., Palestine, Texas, to Miss Laura Elizabeth Carlson of Chicago, February 11.

WAYNE H. CRUM to Miss Anna A. Thornburg, both of St. Petersburg, Fla., in Tampa in March.

HERSCHEL COCHRAN SUDDUTH, Caddo, Okla., to Miss Olivia Jewell Sims at Tupelo, Miss., in March.

ARTHUR KLEIN, Woodbridge, N. J., to Miss Beatrice Dean Temko in Richmond, Va., February 28.

ABRAM BERRY, Columbia, S. C., to Miss Bernice Frances Coleman of Charleston in March.

CARL B. SPUTH JR. to Miss Ruth Agnes Means, both of Indianapolis, February 10.

DAVID CLEMENTS FRICK to Miss Lois Louise Scott, both of Toledo, Ohio, April 11.

KENNETH H. SCHNEPP to Miss Lois Catron, both of Springfield, Ill., March 31.

NATHAN ZIMMERMAN to Miss Minette Kositchek, both of Chicago, April 9.

Deaths

Thomas Jefferson Harris, Tucson, Ariz.; University of Pennsylvania Department of Medicine, Philadelphia, 1889; member of the Medical Society of the State of New York; specialist certified by the American Board of Otolaryngology, an honorary member and formerly member of the board of directors; member of the American Academy of Ophthalmology and Otolaryngology; fellow, secretary from 1907 to 1916 and president in 1917, American Laryngological, Rhinological and Otological Society; fellow, past president and for many years secretary of the American Otological Society; past president and secretary of the New York Laryngological Society and the New York Otological Society; past president and secretary of the New York Physicians Mutual Aid Association; member of the permanent commission of the International Otolaryngological Congress; fellow of the American College of Surgeons; formerly professor, diseases of the nose and throat, New York Post-Graduate Medical School, Columbia University, New York; served as consulting surgeon in the throat department of the New York Post-Graduate Medical School and Hospital, New York, and on the staff of the Manhattan Eye, Ear and Throat Hospital, New York; from 1922 to 1940 president of the Jennie Clarkson Home for Children, Valhalla, N. Y.; served as lieutenant colonel in the medical corps of the U. S. Army during World War I, in charge of the department of otolaryngology at the General Hospital, number 14, at Fort Oglethorpe, Ga., and director of the school of laryngology at Camp Greenleaf, Ga.; aged 77; died, March 14, in the Veterans Administration Facility, Northport, N. Y.

Alfred Mitchell Jr. ✠ Prouts Neck, Maine; Medical School of Maine, Portland, 1898; member of the New England Surgical Society and the American Urological Association; fellow of the American College of Surgeons; formerly instructor in genitourinary diseases at his alma mater; in 1903 was appointed adjutant surgeon of the Maine General Hospital, Portland, and later chief of the urologic service, serving until 1937; on the consulting staffs of the Queen's Hospital, Children's Hospital, and the former St. Barnabas Hospital in Portland, the Bath City Hospital, Bath, the Webber Hospital, Biddeford, St. Mary's General Hospital, Lewiston, and the Goodall Hospital, Sanford; served during World War I; aged 70; died, February 8, in Georgetown, Mass., of heart disease.

William Howes Bishop ✠ New York; Hahnemann Medical College and Hospital of Philadelphia, 1889; at one time professor of surgery at the New York Medical College and Flower Hospital; during World War I served as a major, lieutenant colonel and colonel in the medical corps of the U. S. Army; awarded the Distinguished Service Medal and made a Chevalier of the Legion of Honor of France for his exceptionally meritorious and conspicuous service with the base hospital at Orleans, France; fellow of the American College of Surgeons; consulting surgeon to the Flower and Fifth Avenue Hospitals and the White Plains (N. Y.) Hospital; medical director for the Todd Shipyards Corporation; aged 75; died, March 9, of coronary thrombosis.

William Mercer Sprigg ✠ Washington, D. C.; Columbian University Medical Department, Washington, 1885; past president and vice president of the Medical Society of the District of Columbia; formerly associate professor of obstetrics at the Georgetown University School of Medicine; served on the staff of the Georgetown University Hospital; attending obstetrician at the Columbia Hospital for Women and Lying-In Asylum from 1912 to 1937; from 1884 to 1887, superintendent and resident physician and for over thirty years on the staff of the Garfield Memorial Hospital; a member of the board of directors and on the staff of the Medical Center and Doctors Hospital, where he died, March 6, of cerebral hemorrhage, aged 78.

Irving Eugene Charlesworth ✠ Imola, Calif.; Medico-Chirurgical College of Philadelphia, 1906; past president, vice president and secretary of the Napa County Medical Society; past president of the Cumberland County (N. J.) Medical Society; served as a major in the medical corps of the U. S. Army during World War I; formerly associated with the U. S. Public Health Service Reserve; past president and director of the International Rotary in Napa, member of the chamber of commerce and the council on national defense; medical director and superintendent of the Napa State Hospital; aged 66; died, February 28, in the University of California Hospital, San Francisco, of carcinoma.

Herbert Eldridge Milliken, Cape Elizabeth, Maine; Medical School of Maine, Portland, 1901; formerly instructor in medicine at his alma mater; for many years a member of the attending staff of the Maine General Hospital, Portland; fellow of the American College of Surgeons; served during World War I; lieutenant colonel, medical reserve corps, U. S. Army, not on active duty; at one time consultant in internal medicine for the U. S. Public Health Service; while a resident of Waterville served as city physician, secretary of the Waterville Clinical Society and for one term president of the Kennebec County Medical Association; aged 63; died, February 9, in Portland of heart disease.

Marlin C. Crane, Wittenberg, Wis.; Milwaukee Medical College, 1902; member of the State Medical Society of Wisconsin; served during World War I; for his work at Yokohama harbor during the Japanese earthquake in September 1923, when he was in the medical service of a Netherland steamship company, received a medal from the Netherland mercantile marine, a silver medal from Queen Wilhelmina and a loving cup from the persons he assisted; at one time on the staff of the U. S. Public Health Service Hospital, Palo Alto, Calif.; aged 66; died, February 17, in the Shawano (Wis.) Municipal Hospital of chronic myocarditis and coronary occlusion.

KILLED IN ACTION

LIEUT. JAMES BYRON ASHLEY, M. C., A. U. S., 1917-1943

Frederick George Dyas ✠ Hinsdale, Ill.; Northwestern University Medical School, Chicago, 1904; professor of surgery emeritus at the University of Illinois College of Medicine; specialist certified by the American Board of Surgery; member and past president of the Western Surgical Association; member of the American Association for the Surgery of Trauma; fellow of the American College of Surgeons; major, medical corps, U. S. Army, 1918-1919; attending surgeon to the Cook County Hospital, Chicago, Berwyn (Ill.) Hospital and the Hinsdale Sanitarium and Hospital; aged 69; died, March 4, of heart disease.

Paul Stanislaus Wagner ✠ Major, U. S. Army, retired, Redwood City, Calif.; Rush Medical College, Chicago, 1911; graduated from the School for Flight Surgeons in 1920, the Medical Field Service School in 1922 and the U. S. Army Medical School in 1923; commissioned a first lieutenant in the medical corps of the U. S. Army in 1918, became a captain in 1919; retired with rank of major for disability in line of duty in 1929; at one time assistant clinical professor of military medicine at his alma mater; aged 58; died, February 13, in the U. S. Marine Hospital, San Francisco, of coronary thrombosis.

James Byron Ashley, Detroit; University of Michigan Medical School, Ann Arbor, 1941; served an internship at the Harper Hospital; first lieutenant in the medical corps, Army of the United States; aged 25; was killed in action at Guadalcanal, January 13.

Andrew A. Baxter, Brandenburg, Ky.; Hospital College of Medicine, Louisville, 1890; member of the Kentucky State Medical Association; aged 76; died, February 14, in the SS. Mary and Elizabeth Hospital, Louisville, of coronary occlusion.

William Franklin Bell, Plain Dealing, La.; Memphis (Tenn.) Hospital Medical College, 1901; member of the Louisiana State Medical Society; aged 67; died, February 17, in a hospital at Shreveport of cerebral thrombosis.

Hiram Franklin Bigony, Kirkersville, Ohio; Medical College of Virginia, Richmond, 1905; member of the Licking County Board of Health and Harrison township board of education; aged 68; died, February 13, in the White Cross Hospital, Columbus, of angina pectoris.

L. August H. Bishop, Dover, Del.; University of Pennsylvania Department of Medicine, Philadelphia, 1875; in active practice in Dover since 1877; member and in 1912 president

of the Delaware State Medical Society; a charter member and past president of the Kent County Medical Society; surgeon for the Pennsylvania Railroad Company at Dover for fifty-two years; aged 90; on the staff of the Kent General Hospital, where he died, March 13, of heart disease.

Addison A. Blassingame ✠ Denison, Texas; University of Texas School of Medicine, Galveston, 1897; on the staff of the Denison City Hospital and formerly president of the board; formerly member of the staff of the Missouri, Kansas and Texas Railroad Employees Hospital; local surgeon for the Kansas, Oklahoma and Gulf Railway and the Southern Pacific Railroad; aged 68; died, March 1, in the Baylor University Hospital, Dallas, of endocarditis and septicemia following a transurethral prostatectomy.

Harl H. Bronson, Kansas City, Mo.; Marion-Sims College of Medicine, St. Louis, 1896; aged 67; died, February 3.

John Creighton Buchanan, Winnsboro, S. C.; Medical College of the State of South Carolina, Charleston, 1887; chairman of the board of public works of Winnsboro; aged 80; died suddenly, February 28, of coronary thrombosis.

George Washington Buckner, Evansville, Ind.; Indiana Eclectic Medical College, Indianapolis, 1890; formerly U. S. minister to Liberia; on the staff of the Welborn-Walker Hospital; aged 87; died, February 17, of myocarditis.

Neill Henry Buie, Fayette, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1890; aged 76; died, February 26, of carcinoma of the lungs with metastases.

Robert Ira Bull ✠ Newark, N. J.; Long Island College Hospital, Brooklyn, 1904; aged 62; died, February 17, in the Presbyterian Hospital.

Eliam Baxter Burns ✠ Ecru, Miss.; Vanderbilt University School of Medicine, Nashville, Tenn., 1915; aged 59; died, February 12, of pneumonia and rheumatic fever.

Charles Augustus Caldwell, Blytheville, Ark. (licensed in Arkansas in 1903); member of the Arkansas Medical Society; aged 65; died, February 8.

Hawes Campbell, Enfield, Va.; University College of Medicine, Richmond, 1898; member of the Medical Society of Virginia; health officer of King William County; aged 69; died, February 23, of a self-inflicted gunshot wound.

Lloyd Logan Carr, Baltimore; Jefferson Medical College of Philadelphia, 1876; member of the Medical Society of the State of New York; aged 89; died, February 21, of heart disease.

William Henry Carter, Wichita, Kan.; Kansas City (Mo.) Medical College, 1904; member of the Kansas Medical Society; formerly on the staff of the Wichita Hospital; aged 65; died, February 12, of angina pectoris.

John Bunyon Chapman, White Bluff, Tenn. (licensed in Tennessee in 1910); aged 70; died, February 11, in Nashville.

Howard Paxton Collings ✠ Hot Springs National Park, Ark.; Bellevue Hospital Medical College, New York, 1891; member of the House of Delegates of the American Medical Association in 1905; past president of the Garland County Medical Society; fellow of the American College of Surgeons; aged 78; on the staffs of the Ozark Sanatorium and St. Joseph's Infirmary, where he died, March 5, of coronary occlusion.

John F. Culler, Lucas, Ohio; Jefferson Medical College of Philadelphia, 1886; aged 82; died, February 24, of cerebral hemorrhage.

Chester C. Dodge, Chicago; Chicago Homeopathic Medical College, 1887; a retired school principal; aged 91; died, March 13, of arteriosclerotic decompensated heart disease.

George William Fuller, Long Beach, Calif.; Hospital College of Medicine, Louisville, Ky., 1901; aged 68; died, February 21, of coronary thrombosis.

Jacob Arthur Fulton, Astoria, Ore.; Northwestern Medical College, St. Joseph, Mo., 1881; Bellevue Hospital Medical College, New York, 1884; member of the Oregon State Medical Society; fellow of the American College of Surgeons; on the staff of the Columbia Hospital; past president of the staff and was instrumental in the establishment of a nurses' training school at St. Mary's Hospital, where he died, February 21, of carcinoma of the liver, aged 85.

Pattison Fulton, Cincinnati; Hahnemann Medical College and Hospital of Philadelphia, 1940; resident assistant in the department of pathology at the Good Samaritan Hospital; commissioned a lieutenant, junior grade, medical corps of the U. S. Naval Reserve, attached to the Marine Corps; posthumously awarded the Silver Star Medal for conspicuous gallantry and intrepidity; aged 27; died, December 3, at Guadalcanal, Solomon Islands, of shrapnel wounds received in action two days earlier.

Bert Edward Greer, Dallas, Texas; Washington University School of Medicine, St. Louis, 1900; member of the State Medical Association of Texas; aged 66; on the staffs of St. Paul's Hospital and the Methodist Hospital, where he died, February 25, of uremia and acute nephritis.

Frederick Casper Harms, Saugerties, N. Y.; University and Bellevue Hospital Medical College, New York, 1909; veteran of the Spanish-American War; aged 63; died, February 15, of coronary occlusion and arteriosclerosis.

KILLED IN ACTION

LIEUT. (J.G.) PATTISON FULTON, M. C., U. S. N. R., 1915-1942

Henri Joseph Ap John, Jacumba, Calif.; Willamette University Medical Department, Salem, Ore., 1892; at one time associated with the Indian Service; aged 76; died, February 26, of arteriosclerotic heart disease.

Howard Hill Markel ✠ San Francisco; University of California Medical Department, San Francisco, 1911; assistant clinical professor of orthopedic surgery at his alma mater; president-elect of the Western Orthopedic Association; member of the American Academy of Orthopaedic Surgeons; member of the board of the California Society for Crippled Children; for many years consultant to the Southern Pacific General Hospital; on the staffs of St. Francis Hospital and the University of California Hospital; aged 63; died, February 13, of coronary disease.

Harriet L. Post, Duluth, Minn.; Woman's Medical College of the New York Infirmary for Women and Children, New York, 1883; aged 83; died, February 24, of cerebral arteriosclerosis and rheumatic heart disease.

John Calhoun Rice, Braden, Tenn.; Memphis Hospital Medical College, 1902; member of the Fayette County School Board; aged 64; died, February 13, in the Baptist Memorial Hospital, Memphis, of coronary occlusion.

Samuel Henry Smith ✠ Cincinnati; Medical College of Ohio, Cincinnati, 1907; aged 68; member of the staff of the Good Samaritan Hospital, where he died, February 6, of chronic obstructive pulmonary emphysema, bronchopneumonia and myocardial insufficiency.

Joseph Townsend Travers ✠ New York; Long Island College Hospital, Brooklyn, 1908; member of the Radiological Society of North America, Inc.; on the staffs of the Bellevue, Manhattan State and Jewish Memorial hospitals; aged 55; died, February 20.

J. R. Whittington, Gloster, Miss.; Louisville (Ky.) Medical College, 1873; aged 93; died, February 28.

DIED WHILE IN MILITARY SERVICE

Martin Edward Harlan, Onawa, Iowa; State University of Iowa College of Medicine, Iowa City, 1938; member of the Iowa State Medical Society; on the staff of the Onawa Hospital; aged 31; lieutenant, junior grade, M. C., U. S. Naval Reserve; was accidentally drowned in Australia, February 20.

George William Smith, Niagara Falls, N. Y.; Dalhousie University Faculty of Medicine, Halifax, N. S., Canada, 1925; member of the Medical Society of the State of New York; captain in the medical corps of the United States Army Air Corps; aged 42; died, March 22, in Salt Lake City.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and Examining Boards in Specialties were published in THE JOURNAL, April 24, page 1410.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 15-16. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery.

ARKANSAS: * *Medical.* Little Rock, June 3-4. Sec., Dr. D. L. Owens, Harrison. *Eclectic.* Little Rock, June 3-4. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CALIFORNIA: San Francisco, June 28-July 1. *Oral.* Los Angeles, August 9. Sec., Dr. Frederick N. Scatena, 1020 N Street, Sacramento.

CONNECTICUT: * *Written.* Hartford, July 13-14. *Reciprocity.* Hartford, July 27. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, June 8-9. Sec., Dr. J. H. Evans, 1488 Chapel St., New Haven.

DELAWARE: Dover, July 13-15. *Reciprocity.* Dover, July 20. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: * Washington, May 10-11. Sec., Commission on Licensure, Dr. George C. Ruhland, 6150 E. Municipal Bldg., Washington.

FLORIDA:* Jacksonville, June 21-22. Sec., Dr. William M. Rowlett, Box 786, Tampa.

HAWAII: Honolulu, June 12-15. Sec., Dr. J. A. Morgan, 55 Young Building, Honolulu.

IDAHO: Boise, July 13. Dir., Bureau of Occupational Licenses, Mrs. Lela D. Painter, 355 State Capitol Building, Boise.

ILLINOIS: Chicago, June 22-24. Superintendent of Registration, Department of Registration and Education, Mr. Philip M. Harman, Springfield.

INDIANA, Indianapolis, Sept. 14-16. Sec., Board of Medical Registration & Examination, Dr. W. C. Moore, 301 State House, Indianapolis.

KANSAS: Kansas City, May 19-20. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

KENTUCKY: Louisville, Nov. 15-17. Sec., Dr. A. T. McCormack, 620 S. Third St., Louisville.

LOUISIANA: New Orleans, May 6-8. Sec., Dr. R. B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

MAINE: Augusta, July 6-7. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: *Homeopathic.* Baltimore, June 15-16. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, July 13-16. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston.

MICHIGAN: * Ann Arbor and Detroit, June 11-13. Sec., Board of Registration in Medicine, Dr. J. Earl McIntyre, 100 W. Allegan St., Lansing.

NEVADA: Carson City, May 3. Sec., Dr. Richard A. Petty, 215 North Carson St., Carson City.

NEW HAMPSHIRE: Concord, Sept. 9-10. Sec., Board of Registration in Medicine, Dr. D. G. Smith, State House, Concord.

NEW JERSEY: Trenton, June 15-16. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NORTH CAROLINA: Raleigh, June 14-18. Sec., Dr. W. D. James, Hamlet.

NORTH DAKOTA: Grand Forks, July 6-9. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Endorsement.* Columbus, July 7. *Written.* Columbus, Dec. 4. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA:* Oklahoma City, May 10. Sec., Dr. J. D. Osborn Jr., Frederick.

SOUTH CAROLINA: Columbia, June 28-30. Sec., Dr. N. B. Heyward, 1329 Blandena St., Columbia.

SOUTH DAKOTA: * Pierre, July 20. Dir., Medical Licensure, State Board of Health, Dr. J. F. D. Cook, Pierre.

UTAH: Salt Lake City, June. Dir., Department of Registration, Mr. G. V. Billings, 324 State Capitol Bldg., Salt Lake City.

WEST VIRGINIA: Charleston, July 6-8. Commissioner, Public Health Council, Dr. C. F. McClintic, State Capitol, Charleston.

WYOMING: Cheyenne, June 7-8. Sec., Dr. M. C. Keith, Capitol Building, Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: Tucson, June 15. Sec., Dr. Robert L. Nugent, Science Hall, University of Arizona, Tucson.

COLORADO: Denver, June 9-10. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

CONNECTICUT: June 12. Address State Board of Healing Arts, 250 Church St., New Haven.

FLORIDA: DeLand, June 9. Final date for filing application is May 24. Sec., Dr. J. F. Conn, John B. Stetson University, DeLand.

NEBRASKA: Omaha, May 4-5. Dir., Bureau of Examining Boards, Mrs. J. Crawford, 1009 State Capitol Building, Lincoln.

NEW MEXICO: June 14. Sec., Miss Pia Joerger, State Capitol, Santa Fe.

OREGON: Corvallis, July 10. Sec., State Board of Higher Education, Mr. C. D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: Providence, May 19. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Building, Providence.

SOUTH DAKOTA: Aberdeen, June 4-5. Sec., Dr. G. M. Evans, Yankton.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Acts: A Mere Allergic Condition Not Compensable.—The workman, a man of about 41 years of age, was employed from 1935 to August 1940 in the gasoline and petroleum products bulk station of the defendant corporation unloading gasoline from tank cars and loading gasoline into trucks. Sometime after entering into his employment he developed a dermatitis or skin eruption which did not result in any disability. In the summer of 1939 an eruption developed on his hands, arms and face which was diagnosed by a dermatologist as an allergic dermatitis due to contact with gasoline and for which he was treated at intervals for about two months. On April 27, 1940 he again developed an eruption on his hands and was again treated until June 22, 1940, when the eruption was pronounced as cured. He continued at his regular work until Aug. 31, 1940, when the employment was terminated by the employer because the workman "was allergic to gasoline poison." He instituted proceedings under the workmen's occupational disease act of Indiana for compensation, "alleging that in the performance of his duties [of his employment] . . . he was exposed to an occupational disease and that he is afflicted therefrom with 'gasoline poisoning-dermatitis-due to gasoline poisoning.'" The industrial board found that the workman contracted an occupational disease by reason of his employment, that he was totally disabled from that disease on Aug. 31, 1940, the date his employment was terminated by the employer, and that he was totally disabled from that date until the hearing before the board, some four months later. An award of compensation was made accordingly in his favor, and the employer appealed to the appellate court of Indiana.

The employer contended that there was no evidence to sustain the finding of the industrial board that the workman became totally disabled on Aug. 31, 1940 on account of an occupational disease and that there was no evidence to support the finding that the disability was continuous from that date until about four months later. The workmen's occupational disease act of Indiana, said the appellate court, provides that:

> "The term 'disablement' means the event of becoming disabled from earning full wages at the work in which the employee was engaged when last exposed to the hazards of the occupational disease by the employer from whom he claims compensation, or equal wages in other suitable employment and 'disability' means the state of being so incapacitated." (Section 16503, Baldwin's Ind. Statute Supp. 1937 to 1934.)

Applying the facts in this case, said the court, to the section just quoted we conclude that the finding and award of the industrial board was erroneous. The workman was not disabled on the 31st day of August 1940. The evidence is absolutely to the contrary. Nor is there any evidence that the workman was disabled subsequent to that time. In fact, the workman's attending physician testified that the cause of the dermatitis was contact with gasoline and that functionally the workman has a normal body and that he can engage in any other activity that any other human being can, provided he has the training and equipment, and that he is not disabled from following any other occupation except that which exposes him to gasoline and that he always will have that allergy. It is true, continued the court, that the workman possibly still has the allergy and that if he comes in contact with gasoline there is a probability of his being afflicted with the dermatitis again, but on Aug. 31, 1940 he was not so afflicted. When his employment was terminated on that date he suffered no disability that caused any loss of time or wages or that would entitle him to be designated as disabled under the act. While it may be said that the dermatitis from which the workman suffered was contracted by coming

in contact with gasoline while working for the employer, the workman was not so afflicted on the date of the termination of his employment nor has he been since that date. It is possible that the allergy still exists, but a fair interpretation of the act leads us to the conclusion that a mere allergic condition from which some affliction might develop was not contemplated in the act.

The award in favor of the workman was accordingly reversed. —*Sinclair Refining Co. v. West, 44 N. E. (2d) 175 (Ind., 1942).*

Society Proceedings

COMING MEETINGS

HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION, CHICAGO, BEGINNING JUNE 7. DR. OLIN WEST, 535 NORTH DEARBORN ST., CHICAGO, SECRETARY.

American Association of Genito-Urinary Surgeons, Stockbridge, Mass., June 10-12. Dr. Charles C. Higgins, 2020 East 93d St., Cleveland, Secretary.

American Association of Industrial Physicians and Surgeons, Rochester, N. Y., May 25-27. Dr. E. C. Holmblad, 28 East Jackson Blvd., Chicago, Managing Director.

American Association on Mental Deficiency, New York, May 12-15. Dr. Neil A. Dayton, Mansfield Training School, Mansfield Depot, Conn., Secretary.

American College of Radiology, Chicago, June 6. Mr. Mac F. Cahal, 540 North Michigan Blvd., Chicago, Executive Secretary.

American Gynecological Society, Hershey, Pa., May 31-June 2. Dr. Howard C. Taylor Jr., 842 Park Ave., New York, Secretary.

American Neurological Association, New York, May 6-7. Dr. Henry A. Riley, 117 East 72d St., New York, Secretary.

American Ophthalmological Society, Hot Springs, Va., May 31-June 2. Dr. Walter S. Atkinson, 129 Clinton St., Watertown, N. Y., Secretary.

American Psychiatric Association, Detroit, May 10-13. Dr. Winfred Overholser, St. Elizabeth's Hospital, Washington, D. C., Secretary.

American Psychoanalytic Association, Detroit, May 9-11. Dr. Leo H. Bartemeier, General Motors Bldg., Detroit, Secretary.

American Society of Clinical Pathologists, Chicago, June 4-6. Dr. Alfred S. Giordano, 531 North Main St., South Bend, Ind., Secretary.

American Surgical Association, Cincinnati, May 13-14. Dr. Warfield M. Firor, Johns Hopkins Hospital, Baltimore, Secretary.

California Medical Association, Los Angeles, May 2-3. Dr. George H. Kress, 450 Sutter St., San Francisco, Secretary.

Connecticut State Medical Society, New Haven, May 25-27. Dr. Creighton Barker, 258 Church Street, New Haven, Secretary.

Georgia, Medical Association of, Atlanta, May 11-14. Dr. Edgar D. Shanks, 478 Peachtree St. N.E., Atlanta, Secretary.

Illinois State Medical Society, Chicago, May 18-20. Dr. Harold M. Camp, 224 South Main St., Monmouth, Secretary.

Iowa State Medical Society, Des Moines, April 29-30. Dr. Robert L. Parker, 3510 Sixth Avenue, Des Moines, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 27-28. Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore, Secretary.

Massachusetts Medical Society, Boston, May 24-26. Dr. Michael A. Tighe, 8 Fenway, Boston, Secretary.

Minnesota State Medical Association, Minneapolis, May 17-19. Dr. B. B. Souster, 493 Lowry Medical Arts Bldg., St. Paul, Secretary.

Mississippi State Medical Association, Jackson, May 11-13. Dr. T. M. Dye, Clarksdale, Secretary.

New Hampshire Medical Society, Manchester, May 11. Dr. Carleton R. Metcalf, 5 South State St., Concord, Secretary.

New Jersey, Medical Society of, Newark, May 25-26. Dr. Alfred Stahl, 55 Lincoln Park, Newark, Secretary.

New York, Medical Society of the State of, Buffalo, May 3-6. Dr. Peter Irving, 292 Madison Ave., New York, Secretary.

North Carolina, Medical Society of the State of, Raleigh, May 10-12. Dr. Roscoe D. McMillan, Red Springs, Secretary.

North Dakota State Medical Association, Bismarck, May 10-11. Dr. L. W. Larson, 221 Fifth Street, Bismarck, Secretary.

Oklahoma State Medical Association, Oklahoma City, May 11-12. Dr. Lewis J. Moorman, 210 Plaza Court Bldg., Oklahoma City, Secretary.

Rhode Island Medical Society, Providence, June 2-3. Dr. William P. Buffum, 122 Waterman St., Providence, Secretary.

West Virginia Medical Association, Charleston, May 17-18. Mr. Charles Lively, 1031 Quarrier St., Charleston, Executive Secretary.

CENTRAL SOCIETY FOR CLINICAL RESEARCH

Fifteenth Annual Meeting, held in Chicago, Nov. 6 and 7, 1942

The President, DR. ARLIE R. BARNES, Mayo Clinic, Rochester, Minn., Presiding

(Continued from page 1413, Volume 121)

Icterus Accompanying Pneumonia in the Negro

DRS. EDWARD L. TURNER, MICHAEL J. BENT, GUERNEY D. HOLLOWAY and JOHN R. CUFF, Nashville, Tenn.: Basal physiologic factors that might indicate a racial predisposition to jaundice were ruled out by studies of 98 normal Negro subjects by checking erythrocyte and leukocyte counts, hemoglobin, bleeding and coagulation time and corpuscular fragility. Using rabbits and dogs, it was found that icterus could not produce accompanying pneumonia unless there was accompanying liver damage. Liver damage was produced by means of carbon tetrachloride, by high fat diets and finally by nutritionally inadequate diets identical with those consumed by some of the Negro patients before they developed pneumonia. When pneumonia was artificially induced in animals whose livers had been damaged either through the use of carbon tetrachloride or through nutritionally deficient diets, van den Bergh reactions became positive, while they remained negative in animals fed normal diets and then given pneumonia. In a final series of 7 dogs, 3 were kept on diets that were entirely adequate and 4 were placed on a diet of overcooked greens, fat meat, corn meal and sorghum, similar to the diets used by many Negro families in the lower economic brackets. When pneumonia was produced in these 7 animals three to seven weeks following the initiation of the dietary regimen, positive van den Bergh reactions were obtained in all the animals on the deficient diets while the van den Bergh test remained negative in the controls.

It is our belief that the high incidence of icterus observed in the 74 Negro patients with lobar pneumonia was due primarily to nutritional deficiencies which rendered the liver more vulnerable to the effects of pneumococcic infection.

DISCUSSION

DR. M. A. BLANKENHORN, Cincinnati: I should like to ask whether there is any relation between the fatality rate and the icterus. Were the fatality rates higher in Negroes than in white persons in that particular epidemic? In the Cincinnati General Hospital Negro patients show no higher fatality rates than white patients, nor do they show higher incidence of nutritional disease.

DR. EDWARD L. TURNER, Nashville, Tenn.: In a group of 74 patients the mortality rate was in the neighborhood of 25 per cent. It was lower than the average hospital mortality rate. Since we have used sulfonamide drugs and have been pushing the idea of vitamin intake a little more in our patients we have seen a definite lowering of the incidence of jaundice in this group. It is rather interesting that Osler said some years ago that jaundice occurs in pneumonia in various degrees in different years. In some years it is more, in other years it is less. Our patients were not necessarily underweight but they certainly had a severe vitamin deficiency. We see quite a bit of subclinical pellagra. We see many cases of beriberi and there is a great deal of what might be called subclinical vitamin deficiency in the Negro when on this kind of a diet.

Prevention of Tooth Decay

DR. JULIAN D. BOYD, Iowa City: This report is offered as evidence that tooth decay is preventable through measures directed not toward the tooth but toward the advancement of the level of nutrition. It is based on the prolonged study of 55 teen aged children, each of whom was observed repeatedly both as to medical and as to dental status over periods of years. In all but 3 of the subjects caries made no advance for long periods of time; in most of them no significant degree of advance occurred throughout observation. With the exception of the 3 mentioned, all were living under a prescribed regimen of diet and their medical condition (diabetes mellitus) made it likely that the prescribed regimen of diet was followed with fair constancy. Prior to the establishment of the dietary regimen these children had caries experience in degree similar to what would be predicted for an average child population.

Subsequent to the establishment of the diet the incidence of caries progression was inversely proportional to the constancy of diet observance. Twenty children had no advance of caries for an average interval of five and one-half years; 35 had no caries for three years or longer; 44 had none for periods exceeding two years. For the whole group the average rate of advance was less than a fifth of what would be predicted for the general child population. The 3 children who failed to show arrest of caries were unable because of socioeconomic reasons to follow the prescribed regimen for any significant period; their rate of caries advance equaled or surpassed the predicted "normal" rate. In other subjects, when caries was observed to advance, the period of advance usually could be identified with an interval of abandonment or of relaxation of the prescribed regimen. During such periods the rate of advance corresponded with that observed in the average child without diet supervision.

The degree of freedom from caries at 13 years of age was directly proportional to the duration of diet control prior to that time; all those whose diet control was instituted prior to the age of 6 years were entirely free from caries at the age of 13. The annual caries increment subsequent to 13 years likewise was closely dependent on the prior duration of diet control but was lessened notably even in those who had assumed diet control in their teens.

Correlations were made between the fluorine content of domestic water supplies of each child and his extent and increment rate of caries. No significant correlation was demonstrated.

This report is not concerned with the characteristic of the diabetic diet which led to the reduction of caries. The point at issue is that caries progression is preventable and that this is accomplished through measures not directed toward the teeth but toward the maintenance of excellent health and nutrition in the subject as a whole.

DISCUSSION

DR. JOHN TUCKER, Cleveland: This paper gives further evidence of the importance of a well balanced diet in the maintenance of sound tooth structure. I believe, however, that once more the dentists are becoming interested in the relationship of bacterial growth to tooth decay. Many of us recall the frequent admonitions of our parents to avoid eating candy and sweets, especially at night. With this thought in mind, I should like to ask Dr. Boyd whether he restricted carbohydrates in the children's diet, especially at the evening meal or at bedtime.

DR. JULIAN D. BOYD, Iowa City: The intake of sweets automatically is lessened if a child eats all the foods his body needs for proper functioning. Dr. Icie Macy (Nutrition and Chemical Growth in Childhood, Springfield, Ill., Charles C Thomas, 1942, vol. 1, p. 84) recently presented data to indicate that the desire for sweets is lessened if an optimum diet is ingested. I feel that bacteria play no more than a secondary role in the causation of caries and that if sugar promotes tooth decay it does so through replacement of foods needed for the body's normal functioning rather than by any regional effect. I tell parents that if children eat all the dietary ingredients prescribed I will not prohibit the use of sweets in reasonable amounts. I prescribe daily 1 quart of milk, one or two eggs, a liberal serving of meat, fish, chicken or liver, two liberal servings of vegetables, a similar amount of fruit and a teaspoon of cod liver oil. Such a basic diet will furnish only about 1,200 calories. The remainder of the energy quota may be supplied through any type of food. I believe that, if the child eats and assimilates the foregoing foodstuffs daily, caries will be negligible in its extent.

Histaminic Cephalgia Resulting in Production of Acute Duodenal Ulcer

DR. BAYARD T. HORTON, Rochester, Minn.: The outstanding complaint of histaminic cephalgia is of acute attacks of excruciating pain which involves the eye, temple, neck and often the face. It usually occurs at night, will awaken the patient out of a sound sleep and cause him to jump out of bed and pace the floor in a vain attempt to get relief. These attacks usually last from a half to one hour. The pain is associated with the following signs, all of which appear on the affected side: profuse watering and congestion of the eye, rhinorrhea or stuffiness of the nose, increased surface temperature, and often swelling of the temporal vessels. These headaches have been refractive to other types of treatment but are eradicated within a period of two to three weeks by "desensitization" to histamine.

The direct relationship between acute duodenal ulcer with crater and histaminic cephalgia has been studied in detail in 10 cases during the past year. The formation of the ulcer in each instance has been secondary to the attacks of histaminic cephalgia. During such attacks the gastric acids rise to an abnormally high level just as they would if the patient had received approximately 0.35 mg. of histamine subcutaneously. These subjects have all been hypersensitive to histamine—so much so that even 0.01 mg. of histamine has been sufficient in many instances to precipitate a rise in gastric acidity which is the same as that which occurs among normal subjects following the subcutaneous administration of 0.35 mg. of histamine base. Treatment of the histaminic cephalgia by means of histamine desensitization without other treatment for the duodenal ulcer itself not only has eradicated the attacks of histaminic cephalgia but has permitted the duodenal ulcer to heal promptly within a period of two weeks.

DISCUSSION

DR. ELMER L. SEVRINGHAUS, Madison, Wis.: I have seen 2 patients who almost met Dr. Horton's criteria. I can appreciate the difficulty from overtreating when the dosage of histamine is too large. I should like to inquire whether unilateral lacrimation is part of the syndrome. Just recently Dr. St. John and I examined a patient who had typical bilateral headache produced by the hypodermic administration of histamine. I wonder whether Dr. Horton feels that there are other varieties of histamine cephalgia.

DR. G. E. WAKERLIN, Chicago: Several groups of investigators have reported that lesions in the upper brain stem give rise to gastric and duodenal ulcers in dogs which can be prevented by bilateral vagotomy. It is possible that the genesis of the ulcers in these patients may in part be due to impulses passing down from the cerebral cortex and the diencephalic region via the vagi to the stomach and duodenum.

DR. HEINRICH NECHELES, Chicago: I wonder whether Dr. Horton is still using histaminase in the treatment of this syndrome.

DR. BAYARD T. HORTON, Rochester, Minn.: In practically every instance the attacks of histaminic cephalgia have been unilateral. In about 3 instances out of perhaps 200 subjects I have observed bilateral lacrimation. This represents the exception, not the rule. I am not familiar with lesions in the brain stem producing peptic ulcers which might in some way be comparable to the series of patients I have just presented. It must be kept in mind that these subjects with histaminic cephalgia have no clinical evidence of lesions in the brain stem and neurologically they are objectively negative. Histaminic cephalgia is such a clearcut clinical syndrome that one no longer needs to defend it. I have been able to eradicate attacks of histaminic cephalgia in a few subjects by the giving of histaminase in large amounts by mouth. That histaminase can be useful as a therapeutic agent when taken by mouth, in my experience at least, is definitely established. As to just how it acts I do not know.

Treatment of Essential Hypertension with Large Doses of Ascorbic Acid

DRS. N. S. DAVIS III and EDUARD FALK POSER, Chicago: Ascorbic acid may be a constituent of the enzymes required for the normal oxidation, dehydrogenation or deamination of amino acids by renal cells. By such action it may prevent the formation of pressor amines and renin in the ischemic kidney or it may inhibit the reaction between renin and hypertensinase to form hypertensin (angiotonin). By its action in the adrenal glands, ascorbic acid may inhibit the formation of hypertensinogen. The administration of ascorbic acid in doses of 1 Gm. daily to a small number of patients with essential hypertension has caused objective or subjective clinical improvement or both in almost all of those to whom it has been administered. It seems to offer a logical physiologic approach to the treatment of essential hypertensive cardiovascular renal disease which is worthy of further trial.

DISCUSSION

DR. G. E. WAKERLIN, Chicago: It is known that ascorbic acid functions as a hydrogen acceptor in plant cells. This may also be true for animal cells but remains to be proved. On the basis of the probability that ascorbic acid plays a role in the oxidative and metabolic functions of the cell, it may conceivably alter or depress the pressor mechanism considered to be present in the kidney of at least some patients with essential hypertension. More work must be done, since these experiments are suggestive but do not prove that ascorbic acid has an antihypertensive effect in essential hypertension. We are going to try large doses of ascorbic acid in experimental renal hypertension in dogs. There are some reports that vitamin B complex is effective in clinical essential hypertension. I used large doses of the complex in one renal hypertensive dog for two months without obtaining any reduction in blood pressure.

DR. R. D. TAYLOR, Indianapolis: There was no mention of diagnosis in this group of patients. How often and under what conditions were these pressures taken? In a small group of patients isolated blood pressure readings can have no value. Dr. E. V. Allen has recently pointed out the reasons why there are upward of sixty preparations alleged to lower arterial blood pressure. The error of isolated pressure readings was his main point. Have there been any checks of improvement other than arterial blood pressure readings?

DR. W. E. BROWN, Omaha: I should like to ask if there were any blood studies on ascorbic acid, and whether there were any clearance studies to estimate the patient's tolerance for ascorbic acid.

DR. N. S. DAVIS III, Chicago: I am in agreement regarding the wide fluctuations in blood pressure that were mentioned. For that reason I presented cases in which blood pressure readings had been taken by the same individual under similar circumstances over a period of years before the therapy was commenced, in order that its effect might be compared with the blood pressure levels at the same season in previous years. The effects of psychic upsets on the blood pressure level is also shown in some of the records presented. I am planning to study the ascorbic acid blood levels and clearance of such patients before and after treatment is instituted but these studies have had to be postponed.

Treatment of Experimental Renal Hypertension with Vitamin A Concentrate

DR. G. E. WAKERLIN, C. A. JOHNSON, PH.D., W. G. MOSS, M.S., and E. L. SMITH, PH.D., Chicago: We have studied the effect of a vitamin A concentrate by mouth in experimental renal (Goldblatt) hypertension in dogs. Striking reductions in blood pressure were observed in three renal hypertensive dogs treated daily with 200,000 units of vitamin A concentrate in sesame oil by mouth for three months followed by 400,000 units for an additional three months. Two control dogs treated with sesame oil by mouth for six months showed no significant changes in their hypertensive levels. One hypertensive dog has thus far shown no significant change in blood pressure after two months of treatment with 400,000 units daily of a highly purified vitamin A preparation by mouth. Blood serum vitamin A determinations showed good absorption of the purified vitamin A. One hypertensive dog has thus far shown no significant change in blood pressure after two months of treatment with heat inactivated vitamin A concentrate. These incomplete results suggest but do not prove that the antihypertensive activity of the vitamin A concentrate which we have used is due to some heat labile constituent of the concentrate other than vitamin A.

In view of the therapeutic results with the vitamin A concentrate, a study of its prophylactic effect was also made. Thus far 4 dogs have been treated for three months prior to bilateral constriction of the renal arteries with 400,000 units of the concentrate daily by mouth. Two of these dogs developed malignant hypertension following constriction, demonstrating no protection conferred by vitamin A against malignant experimental renal hypertension. The other 2 dogs were not protected against typical benign experimental renal hypertension. Four control dogs were treated prophylactically with sesame oil by mouth. Three of them developed malignant hypertension and the fourth benign hypertension following constriction of the renal arteries. These incomplete results again suggest but do not prove that vitamin A concentrate in the dosage used is not effective prophylactically in experimental renal hypertension in dogs.

No evidences of toxicity from the vitamin A concentrate were detected in any of the animals.

The mechanism of the therapeutic effect of vitamin A concentrate in experimental renal hypertension in the dog is obscure. The fact that large doses of vitamin A preparations have been shown to increase the urea, inulin and diodrast clearances of normal dogs suggests that the vitamin A concentrate which we employed may have altered the pathophysiologic pressor mechanism produced by renal artery constriction. Obviously the suggestion that the antihypertensive effect may be due to some heat labile constituent of the concentrate other than vitamin A must be investigated further.

DISCUSSION

DR. A. C. CORCORAN, Indianapolis: I have had under observation 10 patients, 9 of them suffering from essential and 1 from malignant hypertension; in 2 arterial pressure decreased 10-15 mm. of mercury during treatment with vitamin A but almost certainly from some other causes. There was no subjective improvement in any, and the patient with malignant hypertension rapidly developed renal and circulatory failure. Renal blood flow and filtration rate increased in 5 patients treated for four weeks and in 1 after three weeks; observations after one or two weeks showed no change in 3 patients and after four weeks in 1. Therefore 5 of 6 patients suffering from essential hypertension showed increased renal perfusion after four weeks' treatment. The increase was in 2 observations associated with increased cardiac output due to tachycardia. Clinically, however, the data do not point to the conclusion that vitamin A is of any real value in the treatment of hypertension in human beings even though renal perfusion is usually increased. In terms of body weight the dose we used is roughly one tenth of that used by the authors. It might be argued that a more beneficial effect might have occurred with larger doses, and these are being instituted.

DR. L. N. KATZ, Chicago: During the past six weeks 12 dogs with nephrogenic hypertension, 3 of which showed an associated renal excretory insufficiency, were daily given 400,000 units of vitamin A dissolved in fish oil. No drop in blood pressure occurred. I am thus unable to confirm the results reported.

DR. HARRY GOLDBLATT, Cleveland: My associates and I also tried vitamin A, but in inadequate quantity, so that the results, although negative, are of no value. We did try carotene (provitamin A) and gave a large dose (400,000 units daily), which is comparable to the amount of vitamin A administered by Dr. Wakerlin and his collaborators. This amount of carotene had no effect on the blood pressure of hypertensive animals. There is a question, however, whether carotene in such quantities is absorbed and transformed to vitamin A. Attempts to demonstrate absorption of this material have given negative results.

DR. G. E. WAKERLIN, Chicago: The difference between the results of Dr. Page and his co-workers and our own may be explained in several ways for patients. In the first place, they used a different vitamin A concentrate and our results suggest that the therapeutic effects which we have seen in our dogs are not due to the vitamin itself but to some other constituent of the concentrate. It is still possible that essential hypertension in man may not be the same as experimental renal hypertension in the dog, so that what will affect one may not affect the other. We had planned on using carotene but have not done so yet. In view of our results on the 1 dog with highly purified vitamin A we would not expect to get results from carotene. Perhaps the explanation for the failure of Dr. Katz's vitamin A preparation to reduce the pressures of his dogs is due to differences between ours and his concentrates in non-vitamin A constituents. None of our therapeutic animals had excretory insufficiency. They all showed the benign type of experimental renal hypertension. So far we have used only 3 hypertensive animals. The fact that we have had therapeutic success in all 3 does not mean, of course, that if we study another 3 or 6 dogs we may not be unsuccessful in all 3 or 6.

(To be continued)

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1932 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Orthopsychiatry, New York

13:1-190 (Jan.) 1943. **Partial Index**

Psychoanalytic Orientation in Family Case Work: Round Table, 1942. L. A. Schwartz, Detroit; R. Waelder, Bryn Mawr, Pa.; W. Healy, Boston; Charlotte Towle, Chicago; G. J. Mohr, Chicago; Martha W. MacDonald, New Orleans; H. S. Lippman, St. Paul, and Madeline U. Moore, Queens, N. Y.—p. 1.
Mental and Social Development of Infants in Relation to Number of Other Infants in the Boarding Home. Harriet L. Rheingold, Chicago. —p. 41.
Developmental Difficulties in Children Under Three. Marian B. Nicholson, Philadelphia.—p. 45.
Differential Uses of Play in Treatment of Young Children. Fanny Amster, Brooklyn.—p. 62.
Group Psychologic Elements in Discipline Problems. F. Redl, Detroit. —p. 77.
Electroencephalographic Studies of Delinquent Boys. R. L. Jenkins, Ann Arbor, Mich., and B. L. Pacella, New York.—p. 107.
Strabismus and Children's Personality Reactions. E. G. Lion, Claire O'Neill and Ruth E. Prager, San Anselmo, Calif.—p. 121.
Psychiatric Study of Juveniles Involved in Homicide. R. M. Patterson, Ann Arbor, Mich.—p. 125.
Psychologic Technics Applied to Selective Service Cases. Marion McKenzie Font, New Orleans.—p. 130.
Performances of Naval Recruits on Kent Oral Emergency Test and the Verbal Battery of Bellevue Wechsler Adult Intelligence Scale. R. J. Lewinski, Great Lakes, Ill.—p. 138.
Industrial Psychiatry in Wartime. Margaret C.-L. Gildea, St. Louis. —p. 141.
Environmental Influences: Relative Importance of Specific Exogenous Factors in Producing Behavior and Personality Disorders in Children. L. A. Lurie, S. Levy, Florence M. Rosenthal and Osna B. Lurie. —p. 150.

American Journal of Physiology, Baltimore

138:191-390 (Jan. 1) 1943. **Partial Index**

Relative Retention of Infused Chloride, Urea and Water. A. V. Wolf, Rochester, N. Y.—p. 191.
Behavior of Spleen in Hemorrhagic Hypotension and Shock. R. N. Lewis, J. M. Werle and C. J. Wiggers, Cleveland.—p. 205.
Increased Erythrocyte Destruction on High Fat Diet. A. Loewy, L. W. Freeman, A. Marchello and V. Johnson, Chicago.—p. 230.
Histologic Effects in Rats Resulting from Adding Rubidium or Cesium to a Diet Deficient in Potassium. R. H. Follis Jr., Baltimore.—p. 246.
Antagonistic Effect of Lipocaic and Anterior Pituitary on Fat Metabolism. O. C. Julian, D. E. Clark, J. Van Prohaska, C. Vermeulen and L. R. Dragstedt, Chicago.—p. 264.
Electrical Activity of a Thalamocortical Relay System. E. W. Dempsey and R. S. Morison, Boston.—p. 283.
*Correlation of Vascular Changes with Changes in Motor Activity and Secretion in the Stomach of Man. S. Wolf and H. G. Wolff, New York.—p. 309.
Oxygen Consumption in Vitamin E Deficiency. H. Kaunitz and A. M. Pappenheimer, New York.—p. 328.
Postural Changes in Respiration. Elizabeth Brogdon Franseen, Holyoke, Mass., and F. A. Hellebrandt, Madison, Wis.—p. 364.
Effect of Ultraviolet Radiation on Body Weight of Mice. H. F. Blum, H. G. Grady and J. S. Kirby-Smith.—p. 378.
Effects of Vitamin D and Other Sterols on Blood Pressure in the Rat. H. L. Briskin, F. R. Stokes, C. I. Reed and R. G. Mrazek, Chicago. —p. 385.

Correlation of Functional Changes in Human Stomach.—Wolf and Wolff have had an opportunity, in a subject with a large gastric fistula, to collect at intervals the total volume of secretion in the stomach. An increased parietal cell output was always associated with hyperemia of the gastric mucosa. Hyperemia also accompanied increased motor activity. From the data gathered the authors conclude that, when an unusually large volume of gastric juice of high titratable acidity accumulates in an unobstructed stomach during a specified interval, it is safe to assume that the mucous membrane is relatively red and that no vigorous contractions are taking place in the stomach. When under similar circumstances the volume is small and its acidity is highly titratable, it is likely that the mucous membrane is relatively engorged with blood and that especially vigorous contractions are taking place. Low acid values with small volumes of gastric juice suggest that the gastric mucosa is relatively pale and that vigorous contractions are not taking place.

Annals of Internal Medicine, Lancaster, Pa.

18:1-144 (Jan.) 1943

Newer Knowledge Concerning Inception of Pneumonia and Its Bearing on Prevention. O. H. Robertson, Chicago.—p. 1.
Aviation Medicine—Brief History: Physical Qualifications for Flying; Oxygen Want and Use of Supplementary Oxygen. L. H. Bauer, Hempstead, N. Y.—p. 15.
*Successful Treatment of Gout. E. C. Bartels, Boston.—p. 21.
Progress Report of Investigations Concerned with Experimental Treatment of Hypertension with Kidney Extracts. I. H. Page, O. M. Helmer, K. G. Kohlstaedt, G. F. Kempf, A. C. Corcoran and R. D. Taylor, Indianapolis.—p. 29.
*Ileostomy for Chronic Ulcerative Colitis (End Results and Complications in 185 Cases). J. A. Bargen, W. W. Lindahl, F. S. Ashburn and J. deJ. Pemberton, Rochester, Minn.—p. 43.
Prophylactic and Therapeutic Detoxication: Guanidine, Indole and Histamine. G. J. Martin, E. H. Rennebaum and M. R. Thompson, New York.—p. 57.
Tularemia: Report of Four Cases with Unusual Contacts. J. H. Shaffer, Detroit.—p. 72.
Factors Which May Influence Senescence. N. S. Davis 3d, Chicago. —p. 81.
Pertinent Problems of Geriatric Medicine. E. J. Stieglitz, Washington, D. C.—p. 89.

Successful Treatment of Gout.—Since 1937 Bartels has treated gout with a low purine and fat and high carbohydrate diet, with periodic administration of cinchophen. Purine restriction relieves the overburdened purine metabolizing mechanism, the low fat intake prevents purine retention and the high carbohydrate content tends toward the diuresis of uric acid. Cinchophen furthers uric acid elimination. The cinchophen is given in 7½ grain (0.5 Gm.) doses three times a day for three days a week. Alcohol is not permitted. When determination of the uric acid every one to three months indicates a reduction in the serum uric acid cinchophen is taken on two days, then one day a week, and when the acid reaches a normal or near normal it is withdrawn. The diet is to be followed indefinitely, but if the uric acid continues at a normal level a more liberal diet is given. Acute attacks are treated by the intravenous injection of dextrose in addition to the regimen. Vitamins A and B are added. At times in gouty arthritis physical therapy is helpful and large troublesome tophi are removed. Of 38 patients treated for at least one year 18 have had the disease for more than nine years (average seventeen), 13 for seven years or less and 7 for three to fifteen years; the 7 did not follow the regimen carefully and used alcohol in varying amounts. In the first two groups there was a drop in the uric acid level and further attacks were prevented. After two years of treatment there were only three minor epidodes among the 18 as compared to sixty-one major attacks during an equal previous time. The uric acid level, which had ranged from 6.3 to 10.2 mg., fell to an average of 6.3. Diet and cinchophen were used three fourths of the total treatment time and diet alone one fourth of the time. Among the 13 patients with an average preregimen uric acid level of 7.6 mg. there were four minor as compared to twenty-three major attacks respectively during twenty months during and before treatment. Diet and cinchophen was used half the time and diet alone the rest of the time. The 7 patients with an average pretreatment acid level of 8.5 mg. had twelve major and four minor attacks during three years of treatment as compared to twenty-three major attacks during the same length of time before treatment. Their average uric acid level fell to 7 mg. Even patients in the phase of chronic gouty arthritis responded to the treatment. The author urges that other physicians consider the plan.

Ileostomy for Chronic Ulcerative Colitis.—The 185 consecutive patients who had had an ileostomy for chronic thromboulcerative colitis at the Mayo Clinic from 1913 through 1939, Bargen and his co-workers state, comprise 5.5 per cent of all patients treated for the disease at the clinic. Eighty-six had undergone ileostomy because of chronic progressive and intractable symptoms, 63 because of severe and fulminating forms and 36 primarily because of complications and sequelae of ulcerative

colitis. Thirty-five patients lived less than fourteen days after ileostomy, 20 lived more than thirteen days but less than six months and thus 130 patients remain concerning whom a study of the effect of ileostomy can be made. Of these 130 patients 37 were satisfied, as they were symptom free or had only mild recurrent symptoms of colitis; 42 also were satisfied, as their frequent symptoms of colonic disease were improved; 25 were not improved (they survived for a considerable time but had severe and frequent recurrence of symptoms) and 26 had no benefit from the ileostomy, their symptoms were severe and frequent and they died within a relatively short time after the first six postoperative months. Therefore the incidence of recurrence of infection in the colon after ileostomy is high. Of 18 patients known to be living fifteen or more years after ileostomy, 10 were females and 8 males and their average age at the time of the ileostomy was 32. The average duration of their symptoms prior to ileostomy was four and a half years but varied from one to fifteen. Thirteen had the ileostomy because of intractable symptoms but without severe exacerbations, 4 for an acute exacerbation of the disease and 1 for rectal stricture and persistent symptoms of perirectal infection. Seven of the 18 had undergone colectomy (2 total) after ileostomy. The several factors that seemed responsible for the satisfactory results in this group of patients were that (1) most of the patients had had the disease for a relatively short time, (2) they were young adults and thus were able to adjust their lives to the handicaps of ileostomy, (3) they were operated on for chronic intractable symptoms and not acute exacerbations and (4) the survival of the 7 after colectomy removed in itself the opportunity for any further development or existence of colonic disease.

Archives of Neurology and Psychiatry, Chicago

49:151-322 (Feb.) 1943

Amyotrophic Lateral Sclerosis and Related Conditions: Clinical Analysis. R. L. Swank; and T. J. Putnam, New York.—p. 151.
Histogenesis of Early Lesions of Multiple Sclerosis: I. Significance of Vascular Changes. I. M. Scheinker, Cincinnati.—p. 178.
*Effect on Electroencephalogram of Changing the Blood Sugar Level. Pauline A. Davis, Cambridge, Mass.—p. 186.
*Results of Insulin and Epinephrine Tolerance Tests in Schizophrenic Patients and in Normal Subjects. H. Freeman, J. M. Looney, R. G. Hoskins and Cora G. Dyer, Worcester, Mass.—p. 195.
*Cerebral Dysrhythmia in Relation to Eclampsia. M. Rosenbaum and G. L. Maltby, Cincinnati.—p. 204.
Intracranial Epidermoids Occurring Simultaneously Below and Above Tentorium. H. A. Black, Brooklyn.—p. 214.
Pseudojacksonian Epilepsy in Children. J. E. Scarff.—p. 223.
Midbrain Deafness: Tumor of Midbrain Producing Sudden and Complete Deafness. P. Sloane, A. Persky and M. Saltzman, Philadelphia. —p. 237.
Atypical Seizures Elicited by Electrical Stimulation of Cerebrum in Cat. J. T. Payne, S. L. Clark, J. W. Ward and F. E. Cowden, Nashville, Tenn.—p. 244.
Paraphenylenediamine Poisoning with Changes in Central Nervous System. C. Davison, New York.—p. 254.
Treatment of Schizophrenia: Follow-Up Results in Cases of Insulin Shock Therapy and in Control Cases. J. S. Gottlieb and P. E. Huston, Iowa City.—p. 266.
Statistical Control Studies in Neurology: I. Babinski Sign. N. Savitsky and M. J. Madonick, New York.—p. 272.
Aberrant Thyroid Tumor of Vertebrae with Compression of Spinal Cord: Recovery After Operation and High Voltage Roentgen Therapy. P. G. Denker and R. L. Osborne, New York.—p. 277.

Blood Sugar and Electroencephalogram.—The electroencephalograms of 40 healthy college students were analyzed by Davis during a routine rest period forty-five minutes after an intravenous injection of insulin (0.05 unit per kilogram), fifteen minutes after the oral ingestion of 50 cc. of (Karo) corn syrup and during three minutes of voluntary hyperventilation. There was no consistent relation between the electroencephalographic changes and the pulse rate or blood pressure. As the level of the blood sugar fell to a minimum of 53 to 85 mg. per hundred cubic centimeters, the normal alpha activity of the electroencephalogram was increasingly replaced by slower waves, chiefly in the 6 to 8 cycle range. The electroencephalogram returned to normal when the level of the blood sugar was restored, but the changes in the electroencephalogram lagged ten or more minutes behind the changes in the blood sugar. "Slow swings" of two to five seconds' duration often appeared in the frontal record during the height of the insulin reaction. These potential changes apparently originate in the skin of the forehead. The conspicuous electroencephalographic changes during the insulin test correlate fairly closely with the appearance of the prominent slow waves during hyperventilation and with the less prominent slow waves in the routine electroencephalogram. Both the insulin test and voluntary hyperventilation apparently accentuate characteristics that are present but less clearly evident in the routine electroencephalogram. The alteration of the blood sugar level does not require the intelligent, active cooperation of a subject and may therefore be applicable for uncooperative or unintelligent subjects. The determination of the effect of the insulin test on the electroencephalograms of abnormal subjects, particularly of known epileptic patients, would be of interest.

Insulin and Epinephrine Tests in Schizophrenic and Normal Subjects.—With the tolerance technics of Fraser, Albright and Smith, Freeman and his associates investigated the glycemic and cardiovascular effect of insulin and epinephrine on 32 male schizophrenic patients with no physical disease and on 20 normal men. All subjects, 15 to 46 years of age, were studied in a fasting resting state. Half an hour after the injection of insulin the mean value of the blood sugar of the normal subjects decreased to a level of 29.6 mg. per hundred cubic centimeters and that for the patients to 39.2 mg. One hour after the injection the respective mean values were 61.1 and 63.6 mg. The indication is that the phase of recovery from the hypoglycemic level was more active in the normal subjects. During the next hour the values for the two groups were similar. Therefore up to this point the trend indicates a greater resistance to insulin, and possibly a less rapid recovery from the hypoglycemic phase, of the patients. Half an hour after the injection of epinephrine the mean for the normal subjects rose 26.1 mg. and in one hour 52.7 mg. per hundred cubic centimeters. The corresponding increases in blood sugar for the patients were 22.5 and 40 mg. The response to exogenous epinephrine was definitely less in the patients; this seems to corroborate the previous observation of a probable lessened reactivity to endogenous adrenal activity. In general the changes in the blood pressure and pulse rate were greater in the normal subjects; they paralleled the differences in the blood sugar between the two groups.

Cerebral Dysrhythmia in Relation to Eclampsia.—According to Rosenbaum and Maltby, the electroencephalograms of 65 per cent of 20 patients with eclampsia were indicative of cerebral dysrhythmia as compared with 2, or 10 per cent, of 20 patients with preeclampsia. Twelve of the patients with eclampsia had a family and personal history of convulsive disorders, while only 2 of the preeclamptic patients had a similar history. It is suggested that a primary cerebral dysrhythmia may be present in patients with eclampsia and that the associated toxemia may be the "trigger mechanism" that exaggerates the inherent dysrhythmia to the degree that convulsions appear. A careful history with an electroencephalographic study might aid in predicting the development of eclampsia. The prophylactic therapy of eclampsia may include the use of anticonvulsant drugs.

Georgia Medical Association Journal, Atlanta

32:1-32 (Jan.) 1943

Diagnosis and Treatment of Cancer of Breast. A. P. Stout, New York. —p. 1.
Leaf Out of Medical History. A. D. Little, Thomasville.—p. 5.
Treatment of Perforated Peptic Ulcers: Report of Thirty-One Cases. M. M. Hagood, Marietta.—p. 7.
Recurrent Convulsions and Allied Disorders. W. A. Smith, Atlanta. —p. 10.
Treatment of Scabies. W. L. Dobes and P. H. Nippert, Atlanta.—p. 14.
Fainting. E. A. Stead Jr., Atlanta.—p. 17.
Subtotal Gastrectomy for Peptic Ulcers. L. Harbin, Rome.—p. 19.

Iowa State Medical Society Journal, Des Moines

33:41-88 (Feb.) 1943

Sputum Studies as a Practical Aid in Pneumococcic Pneumonia. A. W. Frisch, Detroit.—p. 41.
Acute Disseminating Lupus Erythematosus. H. W. Rathe and R. E. Shaw, Waverly.—p. 43.
Acute Abdominal Emergencies. B. J. Dierker, Fort Madison.—p. 45.
Pulsating Exophthalmos. A. D. Woods, State Center.—p. 49.
Treatment of Gonorrhea. A. C. Woofter, Des Moines.—p. 52.
Office Procedures in Ophthalmology. J. E. Dvorak, Sioux City.—p. 53.

Journal of Neurophysiology, Springfield, Ill.

6:1-70 (Jan.) 1943

Cortical Response of Anesthetized Cat to Gross Photic and Electrical Afferent Stimulation. W. H. Marshall, S. A. Talbot, Baltimore, and H. W. Ades, Emory University, Ga.—p. 1.
Effect of Skeletal Fixation on Skeletal Muscle. D. Y. Solandt, Ruth C. Partridge and J. Hunter, Toronto, Canada.—p. 17.
Intravenous Potassium, Calcium and Magnesium and Cortical Electrogram of Cat. M. A. Rubin, H. E. Hoff, A. W. Winkler and P. K. Smith, New Haven, Conn.—p. 23.
Thermoregulatory Pathways in Cat Brain Stem. L. E. Beaton, C. R. Leininger and W. A. McKinley, Chicago.—p. 29.
Spinal Distribution of Thermoregulatory Pathways in Monkey. L. E. Beaton and C. R. Leininger, Chicago.—p. 37.
Response of Single Auditory Nerve Fibers to Acoustic Stimulation. R. Galambos and H. Davis, Boston.—p. 39.
Secondary Acoustic Area in Cerebral Cortex of Cat. H. W. Ades, Emory University, Ga.—p. 59.
Pseudaffective State and Decerebrate Rigidity in Sloth. S. W. Britton, Charlottesville, Va., and R. F. Kline.—p. 65.

Journal of Urology, Baltimore

49:1-202 (Jan.) 1943

Papillomatosis of Bladder: New Conceptions of Etiology and Treatment. T. J. Kirwin, New York.—p. 1.
Chemical Carcinogenesis, Drugs, Dyes, Remedies and Cosmetics, with Particular Reference to Bladder Tumors. E. Davis, Omaha.—p. 14.
Carcinoma of Bladder: Importance of Rectoabdominal Palpation Under Anesthesia in Selection of Cases for Total Cystectomy. H. J. Jewett, Baltimore.—p. 34.
Surgical Treatment of Disease of Horseshoe Kidneys. A. E. Goldstein and B. S. Abeshouse, Baltimore.—p. 42.
Obstructive Factors in Renal Infections. J. C. Birdsall, Philadelphia. —p. 55.
Use of Elastic Tension Sutures in Nephrotomy Wounds. B. Barelare Jr. and S. A. Vest, Charlottesville, Va.—p. 60.
Carcinoma of Renal Pelvis and Ureter. A. E. Bothe, Bethesda, Md. —p. 69.
*Ureteral Stricture and Bright's Disease: Report on Nine Illustrative Cases. G. L. Hunner, Baltimore.—p. 77.
Etiology of Anuria with Emphasis on Prevention and Treatment: Analysis of Nine Cases. H. E. Kasten, Beloit, Wis.—p. 93.
*Endocrine Treatment of Cancers of Prostate. A. L. Dean, Helen Q. Woodard and G. H. Twombly, New York.—p. 108.
Carcinoma of Prostate: Pitfalls in Diagnosis, with Report of Two Cases. A. Strachstein, New York.—p. 118.
Nonmutilating Castration for Relief of Prostatic Carcinoma. H. L. Tolson, Cumberland, Md.—p. 125.
American Certifying Boards, with Special Reference to Board of Urology. H. L. Kretschmer, Chicago.—p. 127.
Opportunities for the Urologist in Small Communities. P. M. Butterfield, Harwich, Mass.—p. 133.
Heminephrectomy. E. B. Vickery, New Orleans.—p. 137.
Renal Surgery. O. S. Lowsley, New York.—p. 148.
Treatment of Renal Stone. W. M. Coppridge, Durham, N. C.—p. 153.
Carcinoma of Bladder. G. R. Livermore, Memphis, Tenn.—p. 164.
Some Urologic Aspects of Endometriosis. T. D. Moore, A. L. Herring and D. A. McCannel, Chattanooga, Tenn.—p. 171.
Diagnosis and Management of Congenital Valves at Vesical Neck: Report of Cases. M. F. Fowler, Atlanta, Ga.—p. 178.
Surgical Treatment of Urogenital Tuberculosis. T. R. Huffines, Asheville, N. C.—p. 184.
Urethral Caruncle. G. F. McKim, P. G. Smith and T. W. Rush, Cincinnati.—p. 187.
Role of the Urologic Surgeon in the Armed Forces. O. S. Lowsley, New York.—p. 192.
Preureteric Vena Cava and Its Embryologic Explanation. P. Gruenwald and S. N. Surks, Chicago.—p. 195.

Ureteral Stricture and Bright's Disease.—Hunner has previously traced the evolution of the concept that ureteral stricture may be an important etiologic factor in the development of many cases of Bright's disease. In his experience it has seemed to occur so often that a thorough examination of renal drainage cannot be claimed without a searching investigation, including the bulb test. The symptoms typically associated with ureteral stricture are similar to those of the early stages of Bright's disease. Many of the more pronounced symptoms of the disease, such as persistent headache, slow mental function, inability to tolerate a sufficient amount of nourishing food and even recurrent convulsive seizures and coma, have yielded promptly to the establishment of good renal drainage. Many patients have experienced this phenomenal improvement after prolonged treatment by other measures failed. The author could not account for the beneficial results obtained by his 9 patients on any basis except that better renal drainage was established. None of the patients had a prolonged rest period in the hospital, except when an operation was needed for some associated secondary complication. None of those with renal infection were given antiseptic drugs. Each was allowed to choose his diet. Most of them were soon able to resume their regular work. The condition of 1 patient, a pregnant woman, was considered only potentially as Bright's disease. Without drainage the patient would have aborted and in all probability would have remained an invalid. At the end of four years she was in excellent health, having carried to term an uncomplicated pregnancy fifteen months before. Three patients engaged in fairly normal activities for five, six and nine years respectively or until death after the ureteral obstruction had been identified and dealt with. Before, it was doubtful whether any of these 3 patients would have lived for even one year if adequate renal drainage had not been established and maintained. The remaining 5 patients are still on the active list for twenty-one, twenty-six, twenty-five, sixteen and twenty-five years respectively after their first treatments. Their average age is now about 62 years. The author believes that not 1 of these 5 persons would be living today had they been dependent on the traditional methods of urologic treatment.

Endocrine Treatment of Cancers of Prostate.—During the last eleven months Dean and his colleagues have used estrogen in the treatment of 60 patients with carcinoma of the prostate. In their experience surgical castration almost invariably has spectacularly relieved patients with prostatic cancer. Only 2 men failed to show improvement. Almost without exception pain disappeared within forty-eight hours, appetites became remarkably good, body weight increased rapidly, strength returned and some of them resumed their former occupations. Eight patients who were able to tolerate 2 to 5 mg. of diethylstilbestrol daily were generally improved; the improvement was as great as that following orchiectomy although possibly somewhat slower. Under diethylstilbestrol the size of the prostatic tumor appeared to diminish regularly and the amount of residual urine decreased. The conformation of the bodies of some of these men became feminine. There were no relapses, although 1 patient failed to respond favorably. From the research point of view it seems that the natural history of prostatic cancer may be definitely modified by changes in the endocrines, which changes can be produced by surgical castration as well as by the oral administration of estrogens. From this starting point not only the cure but probably also the prevention of prostatic cancer can be brought about by the clinician working in collaboration with the biochemist.

New York State Journal of Medicine, New York

43:97-192 (Jan. 15) 1943

Tuberculosis Involving Genitourinary Tract Following Trauma. J. C. McClelland, Toronto, Canada.—p. 135.
Recent Advances in Roentgen Diagnosis of Diseases of Chest Including Body Section Roentgenography (Planigraphy). B. R. Young, Philadelphia.—p. 140.
Mortality from Diseases Treated with the Sulfonamide Drugs. W. D. Sutliff, New York.—p. 144.
Role That Industry Can Play in Elimination of Tuberculosis. W. A. Sawyer, Rochester.—p. 148.
Control of Tuberculosis in Children by Prevention of Its Spread Through Contact. W. J. Orr, Buffalo.—p. 152.
Sulfonated Hydrogenated Castor Oil as Detergent and Ointment Base. S. Quinby and G. W. Fiero, Buffalo.—p. 157.
Soap and the "Soap Problem." H. Sharlit, New York.—p. 160.

Northwest Medicine, Seattle

42:1-30 (Jan.) 1943

Physiology of Aging. A. J. Carlson, Chicago.—p. 6.
Human Infection by Pasteurella Pseudotuberculosis: Report of Case with Recovery. G. A. C. Snyder and Naomi J. Vogel, Spokane, Wash. —p. 14.
Rectus Hemorrhage Simulating Appendicitis. W. B. Hutchinson, Seattle. —p. 16.
Curability of Gastric Carcinoma. D. Metheny, Seattle.—p. 17.

Physiological Reviews, Baltimore

23:1-100 (Jan.) 1943

Physiologic and Clinical Tests of Autonomic Function and Autonomic Balance. C. W. Darrow, Chicago.—p. 1.
Muscular Disorders Associated with Deficiency of Vitamin E. A. M. Pappenheimer, New York.—p. 37.
Microrespiration Technic. J. M. Tobias, Chicago.—p. 51.
Interrelations of Calcium and Ascorbic Acid to Cell Surfaces and Intercellular Substances and to Physiologic Action. Mary Elizabeth Reid, Bethesda, Md.—p. 76.

Rhode Island Medical Journal, Providence

26:1-18 (Jan.) 1943

Acute Anterior Poliomyelitis: Brief Review. K. K. Gregory, Providence.—p. 1.
Kenny Technic for Infantile Paralysis; Excerpts from the Continuation Course (for Physicians) at the University of Minnesota. W. A. Horan, Providence.—p. 5.

Surgery, Gynecology and Obstetrics, Chicago

76:1-128 (Jan.) 1943

Injuries of Parietes and Extremities. S. L. Koch, Chicago.—p. 1.
*Mysterious Mixed Tumors of Salivary Glands. J. McFarland, Philadelphia.—p. 23.
Amputations for Advanced Arterial Disease: Critical Analysis of Mortality. F. V. Theis, Chicago.—p. 35.
Method for Obtaining Venograms of Veins of Extremities. H. Mahorner, New Orleans.—p. 41.
Carbon Dioxide Snow Electrocautery Technic for Occlusion of Large Veins: Suggested Application to Venous Angioma of Brain. J. Ebin, New York.—p. 43.
*Complications and Causes of Mortality of Surgical Treatment of Carcinoma of Colon and Rectum. J. H. Garlock, L. Ginzburg and A. Glass, New York.—p. 51.
Uterine Contractility During Labor and Effects of Parity and Dystocia on It: Study of 105 Patients with Lorand Tocograph. D. P. Murphy, Philadelphia.—p. 60.
Study of Posterior Urethra in Newborn Female. F. A. Beneventi, New York.—p. 64.
Pathology and Treatment of Indolent Ulcers of Leg. R. E. Heller, Chicago.—p. 77.
*Effect of Various Blood Substitutes in Resuscitation After an Otherwise Fatal Hemorrhage. A. C. Ivy, H. Greengard, I. F. Stein Jr., F. S. Grodins and D. F. Dutton, Chicago.—p. 85.
Sliding or Paraperitoneal Hernia of Pelvic Colon. R. K. Brown, Buffalo.—p. 91.
Enteric Intussusception in Adults. W. H. Gerwig Jr. and H. B. Stone, Baltimore.—p. 95.
Full Thickness Defects of Cheek Involving Angle of Mouth: Method of Repair. W. F. MacFee, New York.—p. 100.
Certain Plastic Problems in Surgery of Peripheral Nerves. J. R. Learmonth and A. B. Wallace, Edinburgh, Scotland.—p. 106.
Gastroileostomy and Gastroileal Ulcer. L. A. Smith and A. B. Rivers, Rochester, Minn.—p. 110.
Plasma Vitamin C and Prothrombin Concentration in Pregnancy and in Threatened, Spontaneous and Habitual Abortion. C. T. Javert and H. J. Stander, New York.—p. 115.
Acute Hematogenous Osteomyelitis Juvenilis. M. Gage, New Orleans.—p. 123.

Mysterious Mixed Tumors of Salivary Glands.—McFarland has collected approximately 400 cases of mixed tumors of the salivary glands—that is, the parotid, the submaxillary and the sublingual—that were seen at various hospitals in and around Philadelphia during more than twenty-five years. His method of finding cases is to examine microscopic slides of salivary gland tumors as may have accumulated in the laboratories, to select the ones that conform to the taxonomic requirements and then to review the protocols for the essential clinical information. Some 200 patients in six Philadelphia hospitals were operated on by seventy-three surgeons. The microscopic structure of these tumors is extremely variable. Harvey, Dawson and Innes made use of fifty-four photomicrographs to explain the variation of their appearance. With such complexity it may become difficult to decide whether a given tumor is a mixed tumor or not. The inclusion or exclusion of such tumors must depend on the theory of origin to which one inclines. If one follows Cuneo and Veau and Chevassu in believing that the tumors arise through the "enclavement" of embryonal substance in the developing face and neck, they may be retained; if, on the other hand, the origin of the tumors from neoplasia of the respective salivary glands is accepted, they must be eliminated. The author's studies agree with the latter, now popular, view. His analysis of the infiltrative growth, local destructive properties, recurrence, metastasis, local interference with function and general toxic action of absorbed tumor products leaves him in some perplexity as to whether mixed tumors are malignant or not. A good deal of this is the result of the different terminology used by pathologists. It might be best to say that they are mixed tumors and will probably recur. There has been an occasional recurrence twenty, thirty and forty years after operation. In mixed tumors postponing surgical intervention ordinarily has everything in its favor. It is wiser not to operate as long as the patient is willing to wait. It seems useless to attempt to control or modify the growth of the tumor or to postpone its recurrence by the use of x-rays or radium. Supposed indications for complete surgical excision are the embarrassment caused the patient by the disfigurement, limited and difficult movement of the mandible, pain from pressure on the sensory nerves and a sudden and rapid increase in the size of the tumor. If the tumor is a mixed tumor, rapid growth usually supervenes after it has existed for years. If the tumor is a carcinoma, its excision usually fails to afford much benefit, as the patient dies regardless of treatment. As for results of treatment among the author's series of collected cases at least half of the recurrences were and many still are believed by their surgeons to have been cured. Doctors fail to follow up their patients, forgetting that as many as forty years may elapse before a recurrence presents itself.

Surgical Treatment of Carcinoma of Colon and Rectum.—Since July 1937 Garlock, Ginzburg and Glass state that they have had the opportunity to study 6 cases of cancer of the cecum, 16 of the ascending colon and 8 of the hepatic flexure. Frequently two or three weeks was taken preoperatively to overcome anemia, nutritional and vitamin disturbances and to treat renal complications and cardiovascular disabilities. The condition of only 13 patients permitted operation at the time of exploration. Operability was influenced more by conditions associated with the growth than by age, obesity and anemia. Free perforation of a carcinoma of the colon is a lethal complication in most instances. The Miller-Abbott tube was used often with obstructing lesions. The preoperative oral administration of sulfanilamide was a greater factor in decreasing the incidence of postoperative infection of the wound and peritonitis than its local use at operation. Postoperative pulmonary complications were beneficially influenced by the sulfonamides. Cardiovascular complications were the major cause of postoperative morbidity and mortality. Wound disruption was curtailed by the use of buried alloy steel wire. A rarely mentioned postoperative complication was retraction within the abdomen of a loop of intestine. For carcinoma of the right colon two stage ileocolic resection, with a three or four week interval between the procedures, is favored, and obstructive resection with wide excision of the mesentery for neoplasm of the transverse and left colon. Suture anastomosis of the left colon should not be done unless the fecal current has previously been completely diverted. For small carcinoma of the rectosigmoid the preference is the Devine operation, for carcinoma of the rectum the one stage Miles abdominoperineal resection and for low-lying neoplasm in the elderly the Lockhart-Mummery procedure. Finally, between 20 and 25 per cent of the patients had undergone treatment for hemorrhoids during the preceding two to five months; thus the importance of a carefully performed digital-rectal examination and proctoscopic visualization of patients complaining of bleeding from the rectum is certainly apparent.

Blood Substitutes in Resuscitation After Hemorrhage.—After massive hemorrhage in animals Ivy and his colleagues found that recovery was prompt though temporary of most animals given injections of saline solution. The procedure has value in case of emergency, with the obvious necessity of further treatment with a more potent preparation as soon as possible. In the latter category may be placed heparinized plasma or serum. Regarding gelatin (plasma gel), the material used was definitely superior to citrated plasma and to the other artificial blood substitutes tested, but it fell far short of perfection. All but two gelatins studied caused definite pseudoagglutination of erythrocytes. If a gelatin can be found which will cause no pseudoagglutination, it will prove to be a good blood substitute for emergency use. Plasma gel was not suitable. The high toxicity of citrate when given in the amounts required as an anticoagulant for the large volume of plasma required under the experimental conditions is a contraindication for its use when hemorrhage is extensive. The great superiority of heparinized plasma over serum is at present obscure. It is obviously not due to the fibrinogen in the one and its absence in the other, but more likely to certain alterations in the protein content which occur during the preparation. Acacia and pectin are totally unsuitable as blood substitutes when the hemorrhage is extensive.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

17:175-238 (Dec.) 1942

Hemorrhagic Disease of Newborn. Elizabeth B. S. Scobbie.—p. 175.
Vitamin K Requirements of Newborn. M. Toohey.—p. 187.
Gastric Acidity During First Year of Life. R. A. Miller.—p. 198.
Bacillary Dysentery. N. Silverthorne and Agnes Walker.—p. 210.
*Relation of Maternal Diet to Breast Feeding. J. H. Ebbs and Helen Kelley.—p. 212.
*Incidence and Mortality of Breast and Artificially Fed Infants Admitted to Hospital with Infections. J. H. Ebbs and Frances Mulligan.—p. 217.
Cystic Fibrosis of Pancreas. C. E. Snelling and I. H. Erb.—p. 220.
Study of Quantitative Fragility Test in Children. Janet Cormick.—p. 227.

Relation of Maternal Diet to Breast Feeding.—Ebbs and Kelley compare the incidence of successful breast feeding among three groups of mothers of the low income class. The 90 women who were supplied with extra food (milk, eggs, cheese, fruit and vitamins) and the 170 who were educated to provide a good antepartum diet were more successful in nursing their infants than the mothers who had been left on their poor antepartum diets. The effect of a poor postpartum diet on nursing was evident by a decrease in the percentage of breast fed babies when extra food was stopped six weeks after the birth of the baby. This sudden decrease might be explained by the change in mental attitude of the mother when the supplementary food was withdrawn or it might have been the result of the sudden withdrawal of certain food factors which possibly influence the secretion and the quality of breast milk.

Mortality of Breast and Artificially Fed Infants.—Among the 1,500 infants less than 1 year of age admitted to the Hospital for Sick Children, Toronto, with infection Ebbs and Mulligan observed that fewer so affected were breast fed than artificially fed. The incidence of breast feeding among these 1,500 infants with infection was less than half that in the well baby clinics of the city. Respiratory infections were more frequent than other infections. The incidence of gastrointestinal infection was lower among the breast fed babies. The mortality rate was slightly higher among the breast fed group.

British Medical Journal, London

2:31-60 (Jan. 9) 1943

The Premature Infant: Management and Prognosis. W. R. F. Collis and M. A. Majekodunmi.—p. 31.
*Treatment of Wounds and Inflammation by X-Rays and Radium Rays. N. S. Finzi and F. Freund.—p. 34.
*Use of Sulfaguanidine in Bacillary Dysentery. A. E. Brewer.—p. 36.
Probable Tetanus Despite Inoculation with Toxoid. R. J. McGill.—p. 40.

Irradiation of Wounds and Inflammation.—Finzi and Freund believe that the use of radiation in the treatment of war wounds is extremely valuable and that the use of the method will without doubt increase much in the future, especially when experience has confirmed the good results, which could not have been achieved by other means. Acute, subacute and chronic inflammation may be treated by small doses of x-rays. Irradiation accelerates the healing of wounds and fractures. The effect of x-rays is due to their influence on local cellular reaction and local immunity. Small doses give good results and obviate late bad effects.

Sulfaguanidine in Bacillary Dysentery.—Brewer treated 77 cases of bacillary dysentery with sulfaguanidine. The drug was used only in severe or refractory cases. Patients were put to bed at rest and kept warm. The frequency and character of their stools were noted, and specimens were plated and examined microscopically. Diet was limited to fluid in the first twenty-four hours. A large oral fluid intake was encouraged to replace fluid loss. No fluid intravenously was necessary. Adjuvant treatment was given; the 36 patients with Shiga infection were given 30,000 units of antiserum. The patients with an acute infection were given an initial dose of 7 Gm. of sulfaguanidine, followed by 3.5 Gm. every four hours; for severe infection 3.5 Gm. was given in two hours after the initial dose, followed in two hours by a further 3.5 Gm. In the main, sulfaguanidine was given for two days after the stools had become normal. Patients with chronic infection received 17.5 Gm. of sulfaguanidine daily in five doses for a minimum of eight days. The length of treatment was increased in the severer cases. A preliminary period of treatment with colonic lavage while on a low residue diet was had by 19 patients. In chronic cases sulfaguanidine must be given until the mucosa has healed; to gage this sigmoidoscopy is essential. Complete cure was obtained in 19 (73 per cent) of the acute cases, in 11 (55 per cent) of the chronic cases in which 90 Gm. was given over six days and in 24 (77 per cent) of the chronic cases in which an average dose of 160 Gm. was given over ten days. Toxic symptoms occurred in only 9 of the 51 chronic cases.

Lancet, London

1: 65-96 (Jan. 16) 1943

Adequate Treatment of Gonorrhea with Sulfathiazole. F. J. G. Jefferiss and G. L. M. McElligott.—p. 65.
Failing Lactation: Study in 1,100 Cases. Margaret Robinson.—p. 66.
*Reflex Governing Outflow of Milk from Breast. H. K. Waller.—p. 69.
*Poisoning by Chlorinated Naphthalene. E. Collier.—p. 72.
Sulfapyridine Anuria Treated by Unilateral Nephrostomy. G. DeLacey, R. H. L. Cohen and J. Spencer.—p. 74.
Graves's Disease—Myxedema—Graves's Disease. H. Zondek.—p. 75.

Reflex Governing Flow of Milk.—To estimate the frequency of breast engorgement and its consequences, Waller questioned 52 consecutive women at an infant welfare center within four weeks of their confinement. All but 4 had been delivered in a hospital. No woman with an abnormal pregnancy, labor or puerperium was included, with the exception of 3 who had mastitis. Twenty-two at four weeks were still breast feeding their babies and 30 had already ceased to do so. To the first question, whether their milk was plentiful in the first week after delivery, 46 replied affirmatively. Damage to the nipples was experienced by nearly three fourths of those who failed to continue breast feeding and in more than a third of the successful ones. Failure to withdraw milk (21 babies) which might be attributable to weakness in the baby was more common with the first born. There was overloading of the breasts in 34, and relief by breast pump was obtained by 27. The data suggested that the common tendency of the breasts to become overfull at the outset involves a risk to the continuance of milk secretion, that the risk of arrest is greatest in the first lactation and that the child's demands for food are unreliable as a means of reducing a state of high breast tension to a level ensuring continuance of secretion of milk. The emphasis is not directly on any particular degree of fulness but on the degree of emptiness to which the breasts are reduced when the child has finished feeding. Certain facts suggest that outflow is dependent on a reflex mechanism, highly susceptible to interference and conditioning. The maintenance of secretion appears to depend on a reflex expelling mechanism which governs the outflow from the breast and which for convenience may be called the draft reflex. When the reflex is interfered with a baby who has learned to rely on its assistance may refuse to attempt to obtain milk. If more was known of the nature of the reflex many of the common hindrances to lactation might be brought under control. The draft reflex, which is so characteristic a feature once feeding is established, does not seem to be operatively effective when the breasts first begin active secretion, a time which seems particularly appropriate to its appearance. In multiparous women who have successfully nursed their babies, secretion and expulsion sometimes coincide. In primiparas the reflex, if present, must often be frustrated almost at once. In them the breast often seems incapable of achieving a balance between secretion and outflow, so that stasis and overloading result. The author believes that a satisfactory reduction in the number of early failures will be seen only when initial overfilling of the breasts is prevented or at least lessened, and it can be ensured that the draft reflex comes promptly and effectively into action.

Poisoning by Chlorinated Naphthalene.—Since the Home Office has included poisoning by chlorinated naphthalene and its sequelae in the workmen's compensation act, Collier declares that it is important for general medical practitioners and especially industrial medical officers, examining factory surgeons and medical referees to know the toxic effects that it can pro-

duce. Twelve illustrative cases of dermatitis and 1 of acute yellow atrophy of the liver among workers in an engineering establishment exposed to the fumes and dust of chlorinated naphthalene are reported. Poisoning by chlorinated naphthalene may result in chloracne of the face, particularly of the sides of the face. If it produces systemic effects (acute yellow atrophy or necrosis of the liver) the liver is usually the only organ damaged. If poisoning is to be prevented, the wax must not be overheated and its fumes and dust must be properly carried away by exhaust ventilation. Workers must be instructed in the importance of personal cleanliness and must be examined every week for signs of acne or jaundice.

An. de la Cáted. Clín. Ginec., Rosario

1:1-400 (July) 1942. **Partial Index**

Cervicitis and Its Treatment. R. Araya.—p. 23.
Functional Disturbance of Ovary. R. Araya.—p. 53.
*Extracts of Endometrium and Ovarian Function. P. E. Borrás.—p. 114.
Endometrium as Gland of Internal Secretion. P. E. Borrás.—p. 121.
Elongation of Uterine Neck in Recurrent Prolapse Treated Earlier by Exohysteropexy. P. Figueroa Casas.—p. 182.
Transplantation of Ovine Hypophysis in Gynecology. P. Figueroa Casas and G. Campagnoli.—p. 190.
Pneumococcic Peritonitis in Adult Women. R. Pineda and P. A. Sans.—p. 225.
Action of Sulfanilamide on Female Genital Apparatus. L. A. Belizán.—p. 239.
Cancer of Vulva. J. L. Boveri.—p. 328.
Cancer of Uterine Stump. V. M. Marques.—p. 378.
Clinical Consideration of Atypical Hypothyroidism. V. M. Marques.—p. 390.

Extracts of Endometrium and Ovarian Function.—At Werner's clinic in Vienna, Borrás had observed the implantation of inserts of endometrium into the remaining uterine stump in order to reduce the menopausal reactions after hysterectomies. Employing the method himself he found that, while in some cases it exerted a real influence, in others the effect was hardly visible and he came to the conclusion that the endometrial implantations into the stump could not solve the problem, the more so since endometriosis resulted in one of his patients. Supposing that extracts of the endometrium would exert a substitutional effect, the author obtained and injected bovine extracts. He describes the difficulties encountered in obtaining them, since it was found that the endometrium had to be obtained from animals in estrus. He also reports clinical trials with different concentrations. The menopausal disturbances of the hysterectomized who still have their ovaries are less intense if they are given periodic injections of endometrial extracts, and women with ovarian insufficiency who need monthly fixed doses of estrone can get along with smaller doses of estrone if endometrial extract is injected fifteen days before the expected menstruation. The clinical results so far obtained are not entirely satisfactory, but the author thinks that it is merely a question of dosage, which is under investigation.

Revista Médica de Chile, Santiago

70:833-931 (Nov.) 1942. **Partial Index**

Primary Malignant Tumor of Gallbladder. E. P. Tagle, O. Avendaño, J. M. Ugarte and R. Sanz.—p. 833.
Vasomotor Crisis of the Extremities. A. Velasco S. and M. Casanueva.—p. 842.
*Clinical Experience with Reaction of Hanger. H. Alessandri, H. Ducci and R. Galecio.—p. 848.
*Lateral Pyelography in Surgical Disorders of Kidney. L. Donoso.—p. 859.
Amebic Dysentery in Chile. H. Dooner.—p. 883.
Transportation of Patients by Airplane. R. Yazigi J.—p. 887.
*Chronic Manganese Poisoning: Two Cases. M. Kaffman, J. Oyarzun and E. Concha.—p. 892.

Clinical Experiences with Hanger's Reaction.—Alessandri and his associates used Hanger's test, which employs the flocculation of cephalin-cholesterol emulsions in order to differentiate obstructive from hepatogenous jaundice, in several groups of patients. In performing the cephalin-cholesterol test on 72 apparently normal subjects they found that as a rule the reaction was negative, rarely it was doubtful and exceptionally, that is, in persons with a history of dyspeptic disturbances or with a previous attack of jaundice, it was mildly positive. Hanger's test performed on 75 patients with catarrhal jaundice revealed positive flocculation in 69 (92 per cent). In a few cases, which showed rapid improvement, the reaction became negative rather early and confusion with mechanical jaundice is therefore not likely. The flocculation reaction runs parallel neither with the functional tests of the liver (tolerance, for carbohydrates and for sodium benzoate) nor with the cholesterol content of the blood. In the majority of cases of catarrhal jaundice the positivity of Hanger's reaction decreases parallel with the clinical improvement and with the decrease in the bilirubinemia figures. The third group of patients on whom the authors made the cephalin-cholesterol test were 12 persons in whom jaundice was produced by arsenotherapy. Positive flocculations were obtained in the majority of these cases, which indicates involvement of the hepatic cells. Negative reaction in a few early cases seem to speak for an obstructive factor. The cases of obstructive jaundice in which the authors performed Hanger's test comprise two groups: 1. Of 14 cases in which the obstruction was due to neoplasms 11 had negative reactions, 2 had mildly positive reactions and 1 had an intensely positive reaction; the last patient had a severe hepatomegaly. 2. Of 16 cases in which choledocholithiasis was present the reactions were negative in 10, mildly positive in 3, moderately positive in 1, intensely positive in 2 and doubtful in 1. The cephalin-cholesterol flocculation proved highly positive in all of the 17 patients with hepatic cirrhosis. The authors conclude that the cephalin cholesterol flocculation is easy, is low in cost and can be performed in any clinical laboratory. It merits to be incorporated in the routine study of patients with digestive disturbances. Although it is not infallible in the differential diagnosis of icteric disturbances, it nevertheless represents a valuable aid. If it is strongly positive in recent jaundice, involvement of the hepatic cells exists; if it is negative in a jaundice that drags on for months, mechanical icterus should be thought of. It is positive in over 95 per cent of the cases of parenchymatous impairment of the liver and, if this damage is severe, positivity of Hanger's test reaches 100 per cent.

Lateral Pyelography in Surgical Disorders of Kidney.—Donoso thinks that lateral pyelograms should be made, if possible, by the retrograde route, that is, by ureteral catheterization. Only when catheterization is not possible should the descending, intravenous method be employed. After the anteroposterior pyelographic exposure the patient is turned on the side. The kidney to be examined should be next to the film. The author describes a number of cases in which he employed the method and reproduces roentgenograms. Lateral pyelography has a wide field of application. The technic is simple and does not greatly disturb the patient. The interpretation is easy. It makes possible otherwise difficult and obscure differential diagnoses. It permits the differentiation of neoplasms, cysts or collections of pus, whether they are renal, perirenal or extrarenal. It reveals primary or secondary retroperitoneal neoplasms, tumors adjacent to the kidney and metastases of malignant tumors. It aids the differentiation between urinary and biliary calculi, shadows of calcified lymph nodes, traumatic renal lesions, congenital pelvic deformities and ureteral stenosis.

Chronic Manganese Poisoning.—Kaffman and his associates describe manganese poisoning in 2 men aged 27 and 42. One had worked in a manganese mine for eight months, the other for a year and a half. Like the other 200 workers in this manganese mine, these men had done their work in an atmosphere charged with mine dust; none of the workers were wearing protective masks. Both patients presented the symptoms typical for manganese poisoning. The first manifestations usually involve the motor apparatus, particularly the walk, which becomes incoordinated. The facial expression becomes masklike, the voice monotonous. Mental impairment varies; it shows itself in indifference, in lack of attention, in amnesia, in somnolence and at times in attacks of excitation. The younger of the 2 patients showed the first signs of manganese poisoning after he had worked in the mine for only five months. The evolution of manganese poisoning varies. In some cases the symptoms regress after contact with manganese ceases, in others the damage is permanent. In 1 of the reported cases there was slow but noticeable improvement a month after the work in the manganese mine had been given up; in the other 1 the mental changes subsided rapidly but not the other symptoms. The authors stress the great importance of prophylactic measures in manganese mines.

Book Notices

Indigestion: Its Diagnosis and Management with Special Reference to Diet. By Martin E. Rehfuss, M.D., Professor of Clinical Medicine, Jefferson Medical College, Philadelphia. Cloth. Price, $7. Pp. 556, with 63 illustrations. Philadelphia & London: W. B. Saunders Company, 1943.

This is an attractive looking book which is well printed and well illustrated. It is likely to be of much interest to the general practitioner, for whom it has been written, because it shows with pictures and descriptions how a number of the common procedures in diagnosis and treatment are carried out. One difficulty about the book is that Dr. Rehfuss tried to cover such a large field that some of the chapters cannot be adequate. One cannot help wishing that the chapter on gastrophotography had been left out and the space given to other subjects such as history taking or nervous indigestion. Psychiatrists would probably question Dr. Rehfuss's advice to administer mixtures of several medicines to patients with nervous indigestion. Most psychotherapists maintain that if one expects to cure a neurosis one must not counteract the effect of telling the patient that he has no organic disease by giving him a lot of medicine for it. A few gastroenterologists might wonder also how far one can hope to get with the dietary treatment of gallstones. There is much good advice in the section on dietetics at the end of the book. It is good to see that Dr. Rehfuss puts little stock in the diagnosis of chronic appendicitis. As he says, shortly after the consultant has told a patient that he has a pure neurosis the man or woman may write to say that a surgeon has just worked a cure by removing the appendix, but then the consultant must not be too disturbed until at least six months have elapsed. By then it will usually be found that the symptoms have all returned. On the whole, this book can be recommended as a good addition to the library of the general practitioner and the gastroenterologist.

A Doctor Without a Country. By Thomas A. Lambie, M.D., Sc.D., F.R.G.S., Field Director of Sudan Interior Mission. With an introduction by Howard A. Kelly, M.D., F.A.C.S., LL.D., of Johns Hopkins University, Baltimore. Second edition. Cloth. Price, $2. Pp. 252, with 7 illustrations. New York, London & Edinburgh: Fleming H. Revell Company, [1942].

A Doctor Carries On. By Thomas A. Lambie, M.D., Sc.D., F.R.G.S., Field Director of Sudan Interior Mission. Cloth. Price, $2. Pp. 173, with one illustration. New York, London & Edinburgh: Fleming H. Revell Company, 1942.

These books were written by an American doctor who has spent many years as a medical missionary in the Sudan and in Ethiopia. They contain much interesting geographic, ethnologic and climatologic information, through which permeates a strong religious flavor. The chapters which pertain to Ethiopia are particularly interesting. The author lived in Addis Ababa, where he became the adviser of Emperor Haile Selassie. He established the Sudan Interior Mission and the George Memorial Hospital, which is named in honor of W. S. George of East Palestine, Ohio, who gave some $70,000 toward its construction. Among the various diseases present was typhus, some victims of which they picked up on the streets and took to the hospital. Dr. Lambie says that cancer and appendicitis were almost never seen in Abyssinia or anywhere in tropical Africa. It was necessary to give up his American citizenship and to become a citizen of Ethiopia. When the Italians invaded that country in 1935 the author became the executive of the Ethiopian Red Cross. Addis Ababa was filled with wounded and retreating soldiers whose condition was pitiable. Dr. Lambie was close by when the emperor and his court fled the capital; not long thereafter he too left Ethiopia, and, ironically, in coming home to America he became a doctor without a country.

The second book deals with the author's return to Africa in 1939, where he again became engaged in medical missionary work. He was of some service to the British army during the Ethiopian campaign, which ended in driving the Italians out of the country. At times these books remind one of the exploits of the great African explorers Dr. David Livingstone and Sir Henry Morton Stanley.

An Evaluation of Dental Health Literature. By Vern D. Irwin, D.D.S., M.P.H., Director, and Netta W. Wilson, M.A., Educational Assistant, Division of Dental Health, Minnesota Department of Health. With a foreword by Frank C. Cady, D.D.S., M.P.H., Senior Dental Surgeon, United States Public Health Service. Approved by the American Association of Public Health Dentists. Paper. Price, 50 cents. Pp. 58, with 1 illustration. Saint Paul & Minneapolis: Bruce Publishing Company, 1942.

This is an exceptionally valuable contribution to the literature of health education. It makes a dual contribution. First it gives a much needed evaluation of dental health literature and clarifies many inaccuracies. Second, it furnishes a pattern for similar evaluation of health education literature in other fields which might well be undertaken by persons as well qualified, for example, in nutrition, communicable disease control and personal hygiene as are the authors of this evaluation in dentistry.

Without going into detail as to the numerous fallacies, controversial statements, half truths and downright errors occurring in dental literature issued not by advertisers, quacks or promoters but by reputable health education groups, it is sufficient to point out here that the authors based their survey on a large number of sources, of which they list seventy-six state health department bulletins, twenty-four publications of the American Dental Association and five miscellaneous publications, including one each of the United States Children's Bureau and the United States Public Health Service, in all of which dental errors, inaccuracies or controversial statements have appeared. In addition, twelve textbooks and twelve magazine publications, including both lay and professional magazines, are listed.

Among 235 statements published before July 1, 1940 and representing the first 235 statements examined, they found 74 to be facts, 57 to be fallacies and 104 controversial. Of the last 145 statements examined, mostly published after July 1, 1940, they found 57 to be facts, 8 to be fallacies and 70 to be controversial statements. They published extensive statements which they considered to be subject to criticism, and opposite each such statement appears their comment and evaluation.

An excellent chapter is that on adaptation of dental health literature to the audience with special reference to material for children. They object to efforts to make children brush their teeth by comparing them with good little rabbits, who obviously never brush their teeth at all. They object to health advice which may be good, bad or indifferent as to rhyme but is mostly bad as to accuracy. They also pay their disrespects to dental health plays in which fallacious implications are carried.

Every health educator or any one else who communicates with the public about health matters should read and digest this evaluation.

So You Feel Sluggish Today: The Causes and Treatment of Constipation. By Harry Gauss, M.D., Assistant Professor of Medicine, University of Colorado, Denver. Cloth. Price, $3. Pp. 291, with 38 illustrations. Boston: Christopher Publishing House, 1942.

According to the introduction, this is intended to be a book "at once instructive to the physician and intelligible and therefore helpful to the layman." It is fair, therefore, to evaluate the book on this basis. The number of instances in which it has been possible to write one book for common use of doctor and layman is so small that each instance is a noteworthy book of permanent value. This book does not achieve that distinction. It is far too elementary for the physician and far too technical for the layman. The book starts out with a descriptive anatomic chapter of thirty-one pages. The rest of the book, exclusive of glossary, is devoted to lengthy, tiresome and repetitious discussions of various factors in the causation of constipation. The effect of all this material on the normal lay reader would be that he would simply rebel against it and toss the book aside. The introspective person with constipation, however, would seize on this book and find it full of fresh fuel for all his anxieties, real and imaginary. Particularly pernicious is the twenty-three page chapter "Check Your Symptoms," which will be a paradise for the hypochondriac. The twenty page detailed chapter on laxatives, "When and How to Use Them," is an invitation to self medication. Since many of the troubles of the constipated are aggravated, if not caused, by too much concentration on the eliminative function, all these pages on constipation is just too much.

Nurses in Action: The Story of the Army Nurse Corps. By Colonel Julia O. Flikke, A. U. S., Superintendent of the Army Nurse Corps. Cloth. Price, $2.50. Pp. 239. Philadelphia, New York & London: J. B. Lippincott Company, 1943.

I Served on Bataan. By Juanita Redmond, Lieutenant, A. N. C. Cloth. Price, $1.75. Pp. 167, with 16 illustrations. Philadelphia & New York: J. B. Lippincott Company, 1943.

At this time when the recruitment of young women to qualify as nurses for our armed forces is at its peak, these two books are exceedingly welcome. They will do much to aid in the campaign and to enlighten people as to the tremendous service that our nurses render.

Col. Julia O. Flikke is superintendent of the Army Nurse Corps. Her book begins with the decision of a young girl to qualify for the Army Nurse Corps and tells the first steps in such qualification. Then come a brief history of the Army Nurse Corps, an outline of the technic of entrance into the service, and several sections devoted to the work of the army nurse and to army nursing as a career. The final section is a description of the Navy Nurse Corps, the medical and hospital service of the Veterans' Administration and the Indian Service. The book is up to the minute with illustrations which are taken from current war files. Colonel Flikke is the first woman ever to hold the rank of colonel. She served in World War I and during the following years; today there are nurses under her command throughout the world. The volume is authentic, factual and written in a style suitable to the student or to the reader who is interested only in general information.

Lieut. Juanita Redmond was one of the few who escaped from Bataan and Corregidor. When Manila was declared an open city, Lieutenant Redmond went into the jungles of Bataan with other nurses and doctors to set up a hospital. The story of Bataan has been told many times but never more effectively, more sympathetically or more interestingly than it is here told by Lieutenant Redmond. Physicians will find her accounts of gas gangrene and medical care under siege conditions stimulating and informative. Every reader will be moved by this account to do his utmost and then some as a contribution in this war.

The Hospital Care of the Surgical Patient: A Surgeon's Handbook. By George Crile Jr., M.D., Surgeon, Cleveland Clinic, Cleveland, and Franklin L. Shively Jr., M.D., Assistant Surgeon, Cleveland Clinic. Forword by Evarts A. Graham, M.D., Bixby Professor of Surgery, Washington University School of Medicine, St. Louis. Fabrikoid. Price, $2.50. Pp. 184, with 21 illustrations. Springfield, Illinois & Baltimore: Charles C Thomas, 1943.

This first edition by Crile and Shively is a concise, clearly written handbook especially designed for the young physician who is about to begin his training in the field of surgery. The authors have emphasized the application of our knowledge of physiology and biochemistry to the routine preparation of the patient, the operative procedure, the postoperative care and the recognition and treatment of complications. A word regarding prophylaxis against pulmonary complications and embolism would have been of value. The reviewer sought the reaction of several surgical residents to this book and they all agreed that the book was interesting and instructive. The one objection to a book of this kind might be brought against any textbook, and that is that our knowledge of physiology, biochemistry and chemotherapy is increasing and ever changing, and portions of this book may require revision soon. The surgical residents at other hospitals and clinics will also find that the preparation and treatment of the patient vary greatly from certain routine procedures advocated in this book, but naturally it was not the aim of the authors to include all routines. This handbook is recommended to those who are about to begin their graduate study of surgery, and they will find it an "aid in effecting a standardization of hospital treatment."

Index-Catalogue of the Library of the Surgeon General's Office, United States Army (Army Medical Library). Authors and Subjects. Fourth Series, Vol. VII: H-HYSTRIX. Cloth. Price, $2.75. Pp. 972. Washington, D. C.: Supt. of Doc., Government Printing Office, 1942.

This volume on the letter H of the justly famous Index Catalogue consists of 972 pages. The Army Medical Library now contains over 400,000 volumes and 624,000 pamphlets of all sorts. This volume continues the high standards of the compilers of this publication.

The Metabolic Cost of Maintaining a Standing Position with Special Reference to Body Alignment. By Harriet Graham McCormick. Paper. Price, $1.25. Pp. 75, with 9 illustrations. Morningside Heights, New York: King's Crown Press, a division of Columbia University Press, 1942.

This monograph reports clearly a study on the subject mentioned in the title and outlines in detail the methods employed The work was done thoroughly and accurately. The results are presented in full, and conclusions are stated conservatively. A bibliography of eighty-five items is the background for a critical and thoughtful discussion of work related to the problem under investigation. The alinement associated with the minimal metabolic increase is, as might have been expected, a slovenly posture. The authors question whether this is to be advised, because it is maintained primarily by ligamentous action and because it is inefficient "as a starting position and basic underlying pattern for movement." The alinement associated with the maximum metabolic increase was found to be roughly the posture assumed by the military at the command of "attention." Probably, the authors suggest, the ideal is somewhat between these two extremes, a posture which gives the maximum return for a minimal energy expenditure. This posture is one in which the angles formed with the vertical by the lower leg, the upper leg and the trunk are near zero: in other words, one in which the center of gravity of each section of the body is maintained in approximately the same vertical plane. The posture of different persons depends not only on habit early formed but also, no doubt, on variations in origins and insertions of muscles and ligaments. There is no ideal standard of posture which should be applied rigidly to all persons.

A Review of Medicine by Members of the Faculty, Northwestern University Medical School. Edited by Benjamin Boshes, M.D., M.S., Ph.D., Assistant Professor of Nervous and Mental Diseases, Northwestern University Medical School, Chicago. Fifth edition. Cloth. Price, $9.50. Pp. 712. Chicago: Northwestern University Press, 1942.

This book is an outgrowth of the "Lectures of the Cook County Hospital Quiz Course," which are given to medical students preparing for the competitive examinations for internship in the Cook County Hospital, Chicago. Many subjects in medicine, surgery, obstetrics and gynecology, pediatrics and special fields are discussed briefly in outline form: etiology, pathology, symptomatology, complications, differential diagnosis, prognosis and treatment. This form occasionally gives rise to mild absurdities such as that under treatment of heart disease, where the first two entries under the subhead "Active Treatment" are "Absolute Bed Rest" and "Sleep!" The book contains a great deal of simply presented information on many disease conditions. It will appeal to those who like to study according to the outline or quiz method.

Medical Jurisprudence and Toxicology. By John Glaister, M.D., D.Sc., Fellow of the Royal Faculty of Physicians and Surgeons, Glasgow. Seventh edition. Fabrikoid. Price, $8. Pp. 671, with 132 illustrations. Baltimore: William Wood & Company, 1942.

Seven editions since 1902 indicate the extent to which this book has become a classic in British medical jurisprudence. The book follows the British rather than the American approach to the subject, although numerous references to recent American literature are included. A special section of the present volume relates to the war, with the forms used in England for reporting war injuries. Here the material devoted to the effects of blast is already quite obsolete. The concentrated character of the volume makes it necessary in many instances to limit the discussions almost to definitions. As a reference work on modern medical jurisprudence the book is quite adequate.

Interviewing: Its Principles and Methods. By Annette Garrett, Associate Director, Smith College School for Social Work. Paper. Price, $1. Pp. 123. New York: Family Welfare Association of America, 1942.

This monograph on the subject of interviewing is already in its second printing. It deals with the technic of interviewing persons who may be reluctant to talk by reason of shyness or antagonism and those who may be overanxious to talk for reasons of their own. Many examples are given of successful interviews together with discussions as to the reasons for their success. It contains many points which might be helpful to the physician, especially in relation to history taking.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

HAZARDS OF EXPOSURE TO GLASS WOOL, GLASS FRIT OR FOAM GLASS

***To the Editor:*—Can you give me any information as to the hazards to the health of workers employed in the making of glass floss?**

Jean Henderson, M.D., Stamford, Conn.

ANSWER.—The term "glass floss" is a nondescript one variously applied to "glass wool," to "foam glass" and to the "glass frit" as used in porcelain enamels. The manufacture of the last named entails the greater exposures, since common frits may contain lead, silica, fluorspar, cryolite, nitrates, antimony and the like. Further, colored frits may contain selenium, cadmium, chromates, uranium or manganese, depending on the color desired. Some of these enamel frits long have been regarded as a frequent source of lead poisoning. However, it seems more likely that this inquiry refers to "glass wool" or "fiber glass." The process of manufacture differs with the ultimate use contemplated, such as the manufacture of "glass silk" for garments, diving suits, coverings for machinery or, instead, glass pads for air conditioning, insulation, refrigeration or laboratory usage. All further comment is limited to the latter and coarser process. Glass to be reduced to the "wool" state is already made, although the composition may be dissimilar to ordinary glass. The starting point for "glass wool" is the remelting of this glass. Furnaces are so constructed that, when suitable temperatures are reached, the molten glass may be discharged through a sievelike structure. The strings of glass immediately are blown on with live steam or air under pressure. The result is a disintegration of the glass strings into minute fibers lying somewhat in parallel lines in the direction of the air blasts. Since the process starts with preformed glass, the usual exposures of glass manufacture may be eliminated. The remaining and specific exposures may be three in number and are (1) the usual ill effects of high temperatures, (2) mechanical injuries from spicules of glass or (3) carbon tetrachloride or ether vapors, which chemicals are sometimes used to remove a mineral oil lubricant, at times applied to the glass fibers to promote disentanglement. Any handling of fibrous glass may lead to the penetration of the skin by numerous minute glass particles. This may lead to isolated, slow healing minor furuncles or a more diffuse dermatitis. For the purpose of lubrication a light mineral oil may be applied to the mass of glass wool in connection with its "combing." Later this must be removed through the use of some oil solvent, of which carbon tetrachloride is but one example. Although Schulz (Gasmaske **11**:57, 1939) mentions an asbestosis-like condition of the lung of a man working with glass wool, it may be doubted that any specific pneumonoconiosis is likely to arise. A publication entitled "Safe Practice in the Manufacture and Usage of Fibre Glass," being Safe Practice Bulletin No. 58 of the Pennsylvania Department of Labor and Industry, February 1940, furnishes extensive information about the exposures incident to this industry.

VERTIGO IN PATIENTS WITH HYPERTENSION

***To the Editor:*—Is there any treatment that relieves vertigo in cases of hypertension, especially among the aged, when reduction in the blood pressure does not give relief from the vertigo?**

M.D., Illinois.

ANSWER.—The cause or causes of vertigo in persons with hypertension is not accurately known. Persons with hypertension with or without cerebral arteriosclerosis may conceivably, by sudden motions of the head, alter the blood supply to, and thereby the hydrodynamics of, the endolymph system of the static labyrinth and so produce dizziness. Changes in the walls of the end arteries of the labyrinth may further lead to degenerative alterations in the neuroepithelium of the inner ear and so cause vertigo. Blood vessel changes of this type may also be responsible for occasional and minute hemorrhages into the labyrinth, producing thereby abnormal sensations roughly classed as vertiginous.

It is clear that treatment must in large part be empiric and symptomatic. In general, therapy should be directed toward the treatment of the primary ailment and secondarily toward the vertigo. Such latter efforts tend to pattern themselves after the treatment in vogue for Ménières syndrome, although the causation of the latter and the history and findings are thought to be quite different from that seen in persons with hypertension.

The physician may try limitation of fluids for a while; thus water may be restricted to about 1 pint a day. In this country, however, many favor instead a low sodium diet and the ingestion of ammonium chloride as recommended by Furstenberg. The latter is given in capsules, six 7½ grain (0.5 Gm.) capsules being taken three times daily with meals. This is kept up for three days and the drug is then omitted for two days and again resumed. It is best to give the drug in divided doses between mouthfuls of food to avoid gastric distress and vomiting. The treatment is carried on for about six weeks when the ammonium chloride is discontinued, but the salt poor diet is pursued further for another six weeks.

Constipation should be avoided. Excessive use of tobacco and abuse of tea and coffee should be forbidden. Small doses of phenobarbital as well as potassium bromide are occasionally found useful. The sodium salts of these should not be given. If the patient is an older person some thought should be given to the possibility of the presence and the correction of a vitamin lack. The patient should be cautioned about sudden changes in position of the head, as in suddenly arising from bed and in leaning forward to wash the face and tie the shoe laces. It is obvious that the treatment recommended is not based on an exact knowledge of the cause of the symptoms and is but a rationalization of the incomplete knowledge of the day.

References:

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UNCOOPERATIVE PATIENTS WITH SYPHILIS

***To the Editor:*—In October 1939 a married couple came to me with syphilis in the initial stage. They were put on alternating neoarsphenamine 0.6 Gm. and intramuscular bismuth subsalicylate according to the Public Health Service schedule until March 23, 1940, receiving in this time eighteen doses of neoarsphenamine and four doses of bismuth each. In March 1940 I became ill but arranged for their treatment with a neighboring physician of their own choice. On returning to work in July 1940 I persuaded them with considerable trouble to resume treatment, which I completed in December 1941. They have in that time received thirty-four doses of neoarsphenamine and thirty-six doses of bismuth each. In the interval of four months during which I was ill they did not take any treatment as I had arranged for them. Except for those four months they were quite regular in coming in for their treatment. On Jan. 10, 1943 I took a Wassermann test, which was positive in the wife, as were also the Kline and Kahn reactions. I do not believe that these people will be willing to take extensive treatment again. They have a large family and I should like to give them such treatment as they are willing to take and such as will keep down the infection until the disease gets more advanced. These are the things that I wish to know: What would you suggest as the minimum method of keeping the disease under control? How long will it probably be until these cases can be depended on to be noninfectious without treatment?**

M.D., Iowa.

ANSWER.—There is no minimum method of keeping syphilis under control. No guess can be expressed as to the length of time in which these patients will remain noninfectious without treatment. The only thing that can be said in this respect is that 85 per cent of infectious relapses occur within the first two years after the cessation of treatment.

The first correct procedure in the management of this situation at the moment is an immediate examination of the spinal fluid in both husband and wife. The enquirer gives no information as to the recent serologic status of the husband, although it is implied, since the wife is still seropositive, that the husband may be seronegative. If the husband shows no physical evidence of syphilis, if his blood test is negative now and if the spinal fluid is now normal, he does not require further treatment but should be followed with blood tests every two months for the next year, every six months thereafter for an indefinite period of time, and with annual physical examinations.

The wife certainly requires more treatment. The nature and kind of this cannot be outlined without knowledge as to the spinal fluid findings.

There is no royal road to the cure of syphilis, and if the patients refuse to take adequate treatment they should do so at their own risk after the possible consequences have been fully explained. To give an occasional treatment "such as they are willing to take and such as will keep down the infection until the disease gets more advanced" is medically indefensible.

PLASMA BICARBONATE

To the Editor:—What is the normal value for plasma bicarbonate expressed as milliequivalents per liter? If the plasma bicarbonate is directly related to the carbon dioxide combining power, how is it calculated when the value for carbon dioxide combining power is given in volumes per cent?

Joseph H. Davis, Lieutenant, M. C., A. U. S.

ANSWER.—The normal range of bicarbonate concentration in plasma of venous blood from the arm is 24 to 31 millimoles per liter (Earle and Cullen: *J. Biol. Chem.* **83**:539, 545 [Sept.] 1929). Millimolar concentrations are calculated from volumes per cent of carbon dioxide by the formula:

$$\text{Millimoles } CO_2 \text{ per liter} = 0.45 \times \text{volumes per cent } CO_2.$$

The total carbon dioxide content was found by Stadie and Van Slyke (*ibid.* **41**:191 [Feb.] 1920) to average 94 per cent of the carbon dioxide determined by the method of Van Slyke and Cullen (*ibid.* **30**:289 [June] 1917). The bicarbonate content at normal p_H is 95 per cent of the total carbon dioxide. Hence the average bicarbonate content is $0.95 \times 0.94 \times$ the CO_2 capacity, or $0.89 \times CO_2$ capacity.

The factor 0.89 is not constant; it varies between 0.84 and 0.95. Hence calculation of bicarbonate as $0.89 \times CO_2$ capacity involves a ± 5 per cent error.

For precise gasometric determination of the bicarbonate concentration of the circulating blood plasma it is necessary to draw the blood without stasis or exposure to air and to centrifuge it without exposure to air. In the plasma thus obtained one then measures both total CO_2 and p_H. Bicarbonate is calculated from CO_2 by the equation:

$$\text{mM. } BHCO_3 = \text{mM. total } CO_2 \times \frac{1}{1 + 10^{6.1 - p_H}}$$

(Peters and Van Slyke: Quantitative Clinical Chemistry, Interpretations, p. 881) The value of the factor $\frac{1}{1 + 10^{6.1 - p_H}}$ at different plasma p_H values is as follows: p_H 7.0, 0.89; 7.1, 0.91; 7.2, 0.93; 7.3, 0.94; 7.4, 0.95; 7.5, 0.96; 7.7, 0.97. Unless the p_H is definitely displaced from the normal, one may assume that the p_H is 7.4 and calculate simply:

$$\text{mM. } BHCO_3 = 0.95 \times \text{mM. total } CO_2.$$

A simple method for determining plasma bicarbonate directly by titration is described by Van Slyke, Stillman and Cullen (*J. Biol. Chem.* **38**:167 [May] 1919; **52**:495 [June] 1922. Peters and Van Slyke: Quantitative Clinical Chemistry, Methods, p. 822).

SULFONAMIDES AND MOTOR COORDINATION

To the Editor:—I have had under my care a number of civilian pilot training boys for streptococcic sore throat, all of them being confined to bed and receiving sulfanilamide in doses of 1 Gm. three times daily. Today there were three airplane accidents all involving possible poor coordination. One of the pilots had not received any sulfanilamide, another had not had any for four days and the other had not had any for seven days. Will you give an opinion regarding the safe period of time before a patient should pilot a plane after having taken this drug?

M.D., Idaho.

ANSWER.—The effect of sulfanilamide on locomotor coordination persists for approximately forty-eight hours if the drug is given in a full therapeutic dose. Flying personnel who have taken sulfanilamide should therefore be grounded for three days following their last dose of the drug. Owing to the deleterious effects of sulfanilamide on the motor coordination and psychomotor status of the average young adult, the Surgeon Generals of the Army and Navy have ordered that sulfadiazine be used in place of sulfanilamide, since sulfadiazine is as effective therapeutically and has little or no effect on motor coordination. Opinion is somewhat divided as to whether flying personnel should be permitted to fly while taking sulfadiazine. If they are not grounded for other reasons, it is probably safe to permit a flier who is taking sulfadiazine to pilot a plane. This applies also to drivers of motor vehicles.

PSYCHOANALYSIS AND NEUROSIS

To the Editor:—On a thorough routine psychoanalysis of the general population without any selection of cases, what percentage could be classed as absolutely free of any trace of neurosis whether active or latent?

M.D., New York.

ANSWER.—"A thorough routine psychoanalysis of the general population without any selection of cases" has never been carried out and probably never can be carried out. Therefore an answer to this question is not possible.

BILATERAL KIDNEY INFECTION WITH UREA SPLITTING ORGANISMS

To the Editor:—I have a urologic patient whose urine reaction I am able to change from alkaline to acid. He has repeated attacks of ureteral colic, bilateral, and has passed several stones. Cystoscopy and x-ray examination reveal no calculi in the kidney, ureter and bladder region at present. The entire bladder is inflamed and covered with white mucus, which is difficult to wash off. The right kidney and bladder specimens are loaded with pus all the time—the left kidney is not quite so bad. Pyelogram and kidney functions approach normal. Culture of urine sediment reveals B. coli and Staphylococci. I have tried all the sulfonamide compounds and the usual acidifying drugs, mandelic acid and the like, repeated cystoscopies and lavage of kidney pelves, and I am unable to clear up the infection or render the urine acid. I shall appreciate any suggestions.

H. M. Daniel, M.D., Anderson, S. C.

ANSWER.—The patient probably has bilateral kidney infection with a urea splitting organism making for an alkaline urine and tendency toward the production of stone and incrustations. The problem under these conditions of course is a most difficult one and calls for careful persistent management and observation.

With no urinary stasis along the tract from the kidneys through the urethra and without any calcification anywhere in the urinary tract, patients like this respond best to short but thorough courses of sulfathiazole; however, with bladder incrustations these must be treated locally before sulfathiazole management is instituted.

Bladder incrustations are best managed by continuous irrigations, using a two way Foley catheter and rectal drip connection with Albright solution, which consists essentially of citric acid (monohydrate) 32.3, magnesium oxide (anhydrous) 3.8, sodium carbonate (anhydrous) 4.4 and distilled water (to 1,000).

This local acidifier dissolves off incrustations usually in the course of a few days to a week. This local acidifier may be helped by using gluconic acid by mouth and if, this is not available, diluted nitrohydrochloric acid.

HYPOPROTHROMBINEMIA SECONDARY TO HEPATIC DAMAGE

To the Editor:—A woman aged 60 has pain over the right lobe of the liver, ascites, edema of the legs and jaundice of the conjunctiva, also slight skin jaundice. The gallbladder was removed in 1932. Signs and symptoms began about four or five months ago. It has been decided to do an exploratory laparotomy, but the prothrombin test has been 35 to 50 and at present is 40, although we have used everything we know of to increase the blood clotting power during the last three weeks, including five blood transfusions. Kindly outline what treatment might bring the prothrombin to a point where operation could be attempted without danger of hemorrhage. Is this probably impossible on account of the bile in the blood? What would be the lowest prothrombin consistent with safety prior to operation?

M.D., Philadelphia.

ANSWER.—In patients with a hypoprothrombinemia secondary to hepatic damage, administration of vitamin K preparations does not raise the prothrombin level. Blood transfusions will raise the prothrombin temporarily in such cases. Two or three blood transfusions within twenty-four hours before operation should be sufficient to protect the patient against operative hemorrhage. Bile in the blood does not interfere with the formation of prothrombin, as the prothrombin level can be readily raised with vitamin K therapy in patients with uncomplicated obstructive jaundice.

Bleeding does not occur until the prothrombin is reduced to below 20 per cent of normal. Values up to 60 or 70 per cent of normal should allow a fair margin of safety against operative hemorrhage.

PROLONGED USE OF CONDOMS NOT RELATED TO PROSTATITIS

To the Editor:—Kindly advise if there are any harmful effects on the prostate from the prolonged use of condoms. Is there any authority on this? What is the opinion of urologists? Several patients have questioned me concerning this. Is there more danger of prostatitis as the patient grows older?

M.D., Illinois.

ANSWER.—The writer has never seen, heard or read of harmful results occurring to the prostate gland from the prolonged use of condoms. It is difficult to see how this practice could in any way cause prostatitis. Prostatitis is due to infection, either by some distant focus as teeth, tonsils or sinuses, or by influenza, measles, mumps or other diseases or to infection which travels down into the posterior urethra and into the prostate from local infection, like gonorrhea.